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## STUDIES OF PERUVIAN BIRDS. NO. 54 THE FAMILIES CATAMBLYRHYNCHIDAE AND PARULIDAE

BY JOHN T. ZIMMER

I am indebted to Mr. James Bond and Mr. Rodolphe de-Schauensee of the Academy of Natural Sciences of Philadelphia, Dr. Herbert Friedmann of the United States National Museum, and Mr. William H. Phelps of Caracas, Venezuela, for the loan of valuable critical material and for other information of service in the present studies.

Names of colors are capitalized when direct comparison has been made with Ridgway's "Color standards and color nomenclature."

### **Catamblyrhynchus diadema citrinifrons** Berlepsch and Stolzmann

*Catamblyrhynchus diadema citrinifrons* BERLEPSCH AND STOLZMANN, 1896, Proc. Zool. Soc. London, p. 350—Maraynioc, Perú; cotypes in Warsaw Mus., Frankfort Mus., and Amer. Mus. Nat. Hist.

*Catamblyrhynchus diadema pallida* CARRIKER, 1934 (June 25), Proc. Acad. Nat. Sci. Philadelphia, vol. 86, p. 330—Porculla Pass, Perú; ♀; Acad. Nat. Sci. Philadelphia.

Maraynioc, 2 ♂ (including a cotype of *citrinifrons*), 1 ♀; Palambra, 1 ♂.

In Perú, this species is known from the Temperate and Tropical Zones of the northern, central, and southeastern parts of the country, but it seems not to be common anywhere. Nothing appears to have been recorded concerning its behavior beyond Jelski's observation (cf. Taczanowski, 1886, Ornithologie du

Pérou, vol. 3, p. 25) that it occurs in pairs or in troops of mixed species.

No type was specified in the original description of *citrinifrons* from specimens in the Warsaw Museum and Berlepsch collection (now in Frankfurt), so it is presumed that cotypes exist in both collections, although Stolzmann and Domaniewski (Sztolcman and Domaniewski, 1927, Ann. Zool. Mus. Pol. Hist. Nat., vol. 6, p. 168) regard a Warsaw Museum specimen as type. This is negated by one of the original skins in the collection before me which is also marked as type. It is therefore necessary to consider both examples and probably others as cotypes.

The Palambla male, listed above, is a virtual topotype of "*pallida*" but agrees with the central-Peruvian specimens. As pointed out by Hellmayr (1938, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 11, p. 5), the characters ascribed to "*pallida*" are those of immaturity.

Additional Peruvian records are from Pumamarca, Huacapistana, Oconeque, and Porculla Pass.

### ***Parula pitiayumi pacifica* Berlepsch and Taczanowski**

*Parula pitiayumi pacifica* BERLEPSCH AND TACZANOWSKI, 1884, Proc. Zool. Soc. London, p. 286—Surupata, Ecuador; ♂; Warsaw Mus.

Alamor, 7 ♂, 4 ♀; Cebollal, 5 ♂; Guainche, 1 ♂, 1 ♀; Paletillas, 6 ♂, 1 ♀, 1 (?); Palambla, 2 ♂, 4 ♀, 1 (?); Seques, 3 ♂, 1 ♀.

There is no apparent differentiation in a long series of specimens from southwestern Colombia to Seques, Perú. An occasional example shows the throat a little lighter yellow than the breast, but the distinction has no geographical significance. Peruvian records are from Tumbéz, Lechugal, and Paucal. Records from the Río Pullango, on the boundary between Perú and Ecuador, may be left in the Ecuadorian list as originally recorded.

### ***Parula pitiayumi alarum* (Chapman)**

*Compsothlypis pitiayumi alarum* CHAPMAN, 1924 (Nov. 6), Amer. Mus. Novitates, no. 143, p. 2—Chaupe, Perú; ♂; Amer. Mus. Nat. Hist.

Chaupe, 2 ♂ (including type), 4 ♀; Lomo Santo, 2 ♂, 1 (?); Santa Rosa, 1 ♂; Huarandosa, 1 ♀, 1 (?).

There is some variation in the development of the upper wing-bar. In most cases this bar is nearly or quite obsolete, but an

occasional example shows a slight development of it. The same is true of eight east-Ecuadorian birds, none of which is likely to be confused with the more northern *elegans*.

Three males and three females in the Rothschild Collection, collected by Goodfellow and Hamilton and labeled as from Baeza, Ecuador, are not so easily determined. They are smaller than most *alarum* and have the upper wing-bar moderately well developed—in one case quite prominent—and the suspicion arises that these examples belong to *pacifica* and came from the western side of the Ecuadorian Andes, not from Baeza. I have had occasion before to comment on the unreliability of Goodfellow and Hamilton's localities.

Three specimens from Chinchao, Perú, that I collected in 1922 (now in the Chicago Natural History Museum) are from near the southern end of the range of *alarum* and show a definite approach toward the characters of *melanogenys* but I think are best referred to *alarum*, as I have already indicated (1930, Field Mus. Nat. Hist., zool. ser., vol. 17, p. 424). On the other hand, two examples now before me, from the Junín region, while similarly intermediate seem to show a little greater resemblance to *melanogenys* under which I have discussed them further.

Records of *alarum* are from Tambillo and Chinchao.

### ***Parula pitiaiyumi melanogenys* (Todd)**

*Compsothlypis pitiaiyumi melanogenys* TODD, 1924 (July 8), Proc. Biol. Soc. Washington, vol. 27, p. 123—Yungas of Cochabamba, Bolivia; ♂; Carnegie Mus.

Utcuyacu, 1 ♂; Chanchamayo, 1 ♂; Idma, 1 ♀; Chauillay, 1 [♂]; Santa Ana, 1 ♂, 3 ♀; San Miguel, 2 ♂.

These birds agree well with a male and two females from the type locality and a male from Tres Arroyos, Bolivia. Compared with over 150 specimens of *p. pitiaiyumi* from Brazil, Paraguay, Uruguay, Argentina, and eastern Bolivia they are noticeably darker above and somewhat more deeply colored on the breast, at least in the adult male plumage.

A dissident note is sounded by five birds from Espirito Santo, all of which are darker than *melanogenys*, having the pectoral area as deeply colored as in *roraímae*. One of the males furthermore has strong blackish subterminal areas on the interscapular feathers, giving a spotted appearance to the area—a feature not shown by the other males (two) of this small series. Just

what disposition to make of these birds is a problem that I am not able to solve at the moment. There are four names based on Brazilian birds (*plumbea* Swainson, *brasiliانا* Lichtenstein, *venusta* Temminck, and *minuta* Swainson), one of which may be found applicable to the Espirito Santo birds if a good series determines their valid distinction. The proximity of Espirito Santo to Rio de Janeiro, one of the early centers of trade-skin distribution, admits the possibility that the type of one or other of these names may have come from Espirito Santo.

In the discussion of *alarum* I mentioned two birds from the Junín region that are intermediate between *melanogenys* and the more northern form. Neither of these birds has the upper wing-bar so strongly developed as in the best-marked examples of *melanogenys* or more than in the nearest approach in unquestioned *alarum*, and on that basis the specimens are equivocal. Both forms are long winged, and the comparative size is no criterion in this case. One of the birds (Utcuyacu) has the top of the head light enough to fit the extremes of both forms, but that of the other (Chanchamayo) is dark enough to agree best with *melanogenys*, and the relatively dark and dull hue of the interscapular patch is in closer agreement with *melanogenys* than with *alarum*. Consequently I believe these two birds are to be regarded as examples of *melanogenys* at the northern limit of its range.

It is surprising to find typical *pitiayumi* occurring also in the Cochabamba region of Bolivia in very close proximity to the type locality of the present form. Six males and three females from Todos Santos and a female from Mission San Antonio are, however, quite comparable to the rest of the series of *pitiayumi* and easily distinguished from *melanogenys*. Chapman (1925, Auk, vol. 42, p. 205) has already commented on this situation which he ascribes to the difference in elevation of the localities which may be zonal in its effect; *pitiayumi* was found at 1300 feet and *melanogenys* at 3600. If this surmise is true, it must be quite local in its effect, since *pitiayumi* occurs at 5600 feet elevation in eastern Bolivia (Chilón, Santa Cruz) and presumably elsewhere. The Peruvian localities shown by the specimens at hand are at 3500 to 5000 feet which tend to support Chapman's contention that *melanogenys* remains at relatively high elevations.

Additional records of *melanogenys* are from Garita del Sol and Huiro.



***Dendroica petechia peruviana* Sundevall**

[*Dendroica petechia*] g) *peruviana* SUNDEVALL, "June 6, 1869" = 1870, Öfvers. K. Svenska Vetensk.-Akad. Forhandl., vol. 26 (no. 6), p. 609—Callao and Guayaquil; ♂ type from Callao in Stockholm Mus.

I have no Peruvian specimens of this form which is recorded only from Tumbes, Santa Lucia, and Callao in that country, ranging northward in western Ecuador to southwestern Colombia. The original record from Callao is the only evidence supporting the occurrence of this warbler that far south and it may, perhaps, be questionable. It appears to be certain that the type of the allied *D. p. aequatorialis*, collected on the same expedition ("Eugenie" expedition) and said to have come from Guayaquil, actually must have come from Panamá or at least not from Guayaquil. There may therefore be an error in connection with the type of *peruviana* which may, nevertheless, have come from some northern locality on the Peruvian coast, if the "Eugenie" expedition called at any such place. In the meantime, there is no positive proof that "Callao" is untenable as type locality of *peruviana*.

***Dendroica petechia amnicola* Batchelder**

*Dendroica aestiva amnicola* BATCHELDER, 1918, Proc. New England Zool. Club, vol. 6, p. 82—Curslet, Newfoundland; ♂; C. F. Batchelder coll.

Mouth of the Río Curaray, 2 ♂, 4 ♀.

The identification of wintering examples of the North American forms of this species is extremely difficult. I am not at all confident that my determination of such material is correct. It is possible to arrange some 150 examples of this sort in different groups according to intensity of coloration and prominence of markings, especially those individuals taken in March and April just before they would have begun their northward spring migration. Fall and winter birds, which are in the majority, are the most difficult to arrange.

At any rate, comparison of these more or less arbitrary groups with series of the various northern forms at present recognized has resulted in assigning one Colombian and two Ecuadorian birds to *sonorana*; 17 examples to *brewsteri* (Cayenne, British Guiana, Venezuela, Colombia, and Ecuador); 18 to *morcomi* (Venezuela, Colombia, and Ecuador); 20 to *amnicola* (Cayenne, Venezuela, Colombia, Ecuador, and Perú); and 98 to *aestiva* (Trinidad, Tobago, Cayenne, Surinam, Venezuela, Colombia, and

Ecuador). Some of the supposed *amnicola* may possibly be *rubiginosa*, but I have no certain specimens of that far northwestern form from South America, and very few from Central America.

All six of the Peruvian birds listed above seem best assignable to *amnicola*. Five were taken in November and one in October, and they are therefore in the less definitive seasonal plumage. A good series of late spring birds may be necessary to determine the full extent of the southern wintering range of all these forms, and in view of the uncertainty at present I refrain from listing individual specimens of each, other than the Peruvian examples at hand.

There are Peruvian records also from Iquitos and La Merced, but without the specimens in question it is impossible to say to which form they may properly belong. Since they were both originally recorded as *aestiva*, I have left them under that heading as discussed below.

### ***Dendroica petechia aestiva* (Gmelin)**

*Motacilla aestiva* GMELIN, 1789, *Systema naturae*, vol. 1 (pt. 2), p. 996—based on "Figuier de Canada," Brisson, 1760, *Ornithologia sive synopsis methodica* . . . , vol. 3, p. 492, pl. 26, fig. 3; etc.

*Dendroica aestiva mercedes* SZTOLCMAN AND DOMANIEWSKI, 1927, *Ann. Zool. Mus. Pol. Hist. Nat.*, vol. 6, p. 163—La Merced, Chanchamayo, Perú; ♂; Warsaw Mus.

As mentioned in the discussion of *D. p. amnicola*, a record from Iquitos and one from La Merced may possibly belong to *aestiva* as originally cited and in the absence of proof to the contrary may be left with that form. These localities are the most southerly known for the wintering of any migrant form of the species. The La Merced bird was later described as new, but there is nothing in the description to suggest that it was more than a winter visitor from the north which the date of collection (February 26) substantiates.

I have omitted the extensive synonymy of *aestiva*, which would be of little service in the present connection, with the exception of the original reference and that of the description of the supposed new Peruvian subspecies.

### ***Dendroica cerulea* (Wilson)**

*Sylvia cerulea* WILSON, 1810, *American ornithology*, vol. 2, p. 141, pl. 17, fig. 5—Pennsylvania; ♂; Peale's Mus., presumably lost.

*Sylvia rara* WILSON, 1811, American ornithology, vol. 3, p. 119, pl. 27, fig. 2—banks of the Cumberland River; ♀; Peale's Mus., presumably lost.

Pozuzo, 1 "♀" [= ♂].

A winter visitor from North America. Recorded from Huambo, Pumamarca, Ropaybamba, Amable Maria, Monterico, Chanchamayo, Río Colorado, Huachipa, La Gloria, San Emilio, Idma, and Huaynapata.

I have given in the synonymy only the specific names under which the Peruvian references have appeared.

### ***Dendroica fusca* (P. L. S. Müller)**

*Motacilla fusca* P. L. S. MÜLLER, 1776, Natursystem, suppl., p. 175—based on "Figuier étranger," Daubenton, Planches enluminées, pl. 58, fig. 3; "Guyane" = French Guiana.

*Motacilla blackburniae* GMELIN, 1789, Systema naturae, vol. 1, pt. 2, p. 977—based on "Blackburnian Warbler," Pennant, 1785, Arctic zoology, vol. 2, p. 412; New York.

La Lejia, 5 ♂; San Pedro, 4 ♂, 1 ♀; Chaupe, 2 ♂, 6 ♀, 1 (?); Levanto, 1 ♂; Charapi, 1 ♀; Utcuyacu, 2 ♂, 3 ♀; Chilpes, 1 ♀.

A winter visitor from North America. Other Peruvian records are from Tambillo, Huambo, Chinchao, Huachipa, Auquimarca, and Garita del Sol.

The synonymy given above includes only the specific names under which Peruvian references have appeared.

### ***Dendroica breviunguis* (Spix)**

*Muscicapa striata* FORSTER (not *Motacilla striata* Pallas, 1764 = *Muscicapa striata*), 1772, Phil. Trans., vol. 62, art. 29, pp. 406, 428—Severn River = Fort Severn, Hudson Bay; ? type lost.

*Alauda (Anthus) breviunguis* SPIX, 1824, Avium species novae, . . . Brasiliam, vol. 1, p. 75, pl. "LXXVI-VII," fig. 1—"in Provinciae Parae"; Munich Mus., now lost.

Puerto Indiana, 1 ♀; mouth of Río Curaray, 3 ♂, 3 ♀.

Not previously reported from Perú.

The Puerto Indiana specimen is labeled as having been collected on May 20, an unusually late date for this bird to be found in its winter quarters.

### ***Seiurus noveboracensis noveboracensis* (Gmelin)**

*Motacilla noveboracensis* GMELIN, 1789, Systema naturae, vol. 1, pt. 2, p. 958—based on "Fauvette tachetée de la Louisiane," Daubenton, Planches enlu-

minées, pl. 752, fig. 1, and "New York Warbler," Pennant, Arctic zoology, vol. 2, p. 409, and Latham, A general synopsis of birds, vol. 2, pt. 2, p. 958; New York accepted by Hellmayr, 1935.

Mouth of Río Curaray, 1 ♀, 1 (?).

These appear to be the first specimens of the species to be taken in Peruvian territory. Both agree well with the nominate subspecies as represented by autumn birds from the eastern United States.

### ***Geothlypis aequinoctialis velata* (Vieillot)**

*Sylvia velata* VIEILLOT, "1807," Histoire naturelle des oiseaux de l'Amérique septentrionale, vol. 2, p. 22, pl. 74—no locality; Rio de Janeiro, Brazil, suggested, Naumburg, 1930; Edinburgh Mus.

*Geothlypis canicapilla assimilis* BERLEPSCH AND STOLZMANN, 1906, Ornith., vol. 13, p. 75—Chirimoto, Perú; ♂; Frankfurt Mus.

Idma, 1 ♂; Santa Ana, 1 ♂, 1 ♀.

I can see no essential difference between these birds and a long series of 120 skins from eastern and central Brazil, Paraguay, northern Argentina, and Bolivia. The bill is at the minimum length shown by the eastern birds but within their range of variation, and the extent of the gray cap likewise shows no distinction. I have no examples from northern Perú in the neighborhood of the type locality of "*assimilis*," and it is just possible that a distinct form may occur there. Berlepsch and Stolzmann, however, had a number of specimens from Santa Ana which they found to be like the Chirimoto bird except for a lighter tone of green on the back (a variable character), and it appears justifiable, therefore, to reject *assimilis* as a synonym of *velata*.

The slight admixture of greenish color in the gray postocular area is likewise occasionally found in east-Brazilian birds, while there is sometimes a grayish tinge apparent in the green of that area in *aequinoctialis aequinoctialis*. This character, therefore, does not appear to be too promising as a feature of "*assimilis*." Possibly the supposed characters of "*assimilis*" are indicative of a trend toward *peruvianus* to the westward of Chirimoto, or even toward *aequinoctialis* which occurs on the south bank of the Amazon as far westward as the left bank of the Rio Madeira whence I have several examples (Santo Antonio de Guajará).

Records of *velata* (under the names *assimilis*, *velata*, *aequinoctialis*, *cucullata*, and *peruviana*) are from Idma, Santa Ana, Maranura, Huiro, and Chirimoto.



***Geothlypis aequinoctialis peruviana* Taczanowski**

*Geothlypis aequinoctialis, peruviana* TACZANOWSKI, 1884, Ornithologie du Pérou, vol. 1, p. 471—Callacate, Perú; ♂; Warsaw Mus.

Succha, 1 ♂; Viña, 1 ♂.

This form is very like *auricularis*, next to be discussed, but it appears to have a longer wing and tail and a slightly lighter and duller gray cap. I am unable to confirm the shorter bill cited by Hellmayr (1935, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 8, p. 439, footnote) and indicated by the measurements given by Taczanowski. The two birds in hand have the bill within the range of measurements shown in a good series of *auricularis*.

Other records are from Chusgón and Hacienda Limón.

***Geothlypis aequinoctialis auricularis* Salvin**

*Geothlypis auricularis* SALVIN, 1883, Proc. Zool. Soc. London, p. 420—Callao, Perú; ♂; British Mus.

Lima, 5 ♂, 1 ♀, 1 (?); Vitarte, 3 ♂; Huaral, 4 ♂, 3 ♀; Paletillas, 1 "♂" [= ♀]; Trujillo, 4 ♂, 1 ♀.

Some variation is shown in the width of the black frontal band and the extent of black on the sides of the head, but there is no geographical correlation evident. Eight west-Ecuadorian birds agree well with the Peruvian specimens.

Other records are from Chepén, Guadalupe, and Tumbéz.

***Wilsonia canadensis* (Linnaeus)**

[*Muscicapa*] *canadensis* LINNAEUS, 1766, Systema naturae, ed. 12, vol. 1, p. 327—based on "Le Gobe-mouche cendré de Canada," Brisson; Canada; type presumably lost.

Lagarto, 1 ♂; La Merced, 1 (?); Chaupe, 3 ♂; Uchco, 1 ♂; Río Negro, west of Moyobamba, 1 ♀.

A migrant from North America. Additional Peruvian records are from Tambillo, Huambo, Paucal, La Gloria, Chinchao, Vista Alegre, Huachipa, Amable Maria, Monterico, and Idma.

I have omitted the list of synonyms since all Peruvian records are under the name *canadensis* and no supposed Peruvian form has been proposed.

**[*Setophaga ruticilla* (Linnaeus)]**

There seems to have been no clear basis for the inclusion of Perú in the winter range of this species by Sharpe (1885, Catalogue

of the birds in the British Museum, vol. 10, p. 413), an inadvertence that led Taczanowski (1886, *Ornithologie du Pérou*, vol. 3, p. 507) to add it also to his account. It does range southward to northern Ecuador and may possibly be found on occasion straggling even farther and reaching Perú, but at present there is no evidence of it.]

***Myioborus miniatus verticalis*** (D'Orbigny and Lafresnaye)

*Setophaga verticalis* D'ORBIGNY AND LAFRESNAYE, 1837, *Mag. Zool.*, vol. 7, cl. 2, "Synopsis avium," p. 50—Ayupaya, Bolivia; Paris Mus.

This subspecies shows a rather gradual diminution of the white on the outer rectrices from Bolivia northward to northern Perú and southeastern Ecuador, on the Amazonian side of the Andes. There is no place where definition is very marked, and I am unable to separate the northern part of the population from the southern with any degree of confidence. Some of the more northern examples are very close to *ballux*, and examples of the latter form from northern Ecuador often show a trend toward *verticalis* with the preponderance of evidence pointing toward *ballux*. Still farther north, of course, *ballux* is more firmly entrenched, and there is no question of its validity as distinct from *verticalis*. It crosses all three ranges in Colombia and even comes southward into northwestern Ecuador, on the Pacific slope. Like most of the other South American forms, it is not uniform throughout but cannot be satisfactorily broken up.

I refer all Peruvian birds, therefore, except those from the Pacific side of the Andes in the northernmost part of the country, to *verticalis*, while realizing that the population is geographically variable *inter se*, though without stabilized subdivisions. The western population will be discussed a little later.

The most curious fact in the study of *verticalis* has been the apparent impossibility of separating specimens from Mt. Duida and Mt. Roraima, Venezuela, and Twék-quay, British Guiana, from this geographically distant form. They are too deeply yellow on the belly for *pallidiventris* and have too much white on the tail for *ballux* and may be matched with various examples of *verticalis* in both particulars. Admittedly the number of specimens is small (six), and perhaps a greater series might show some distinctions not apparent in the material at hand, but Mr. W. H. Phelps advises me that he made the same disposition of the south-

Venezuelan birds in his collection in Caracas, and agreement with *verticalis* is thus substantiated.

Peruvian records assignable to *verticalis*, not listed with the material examined, are from Huaynapata, San Antonio (near Cosñipata), Potrero, La Gloria, Garita del Sol, Monterico, Vitoc, Ropaybamba, Chirimoto, Tambillo, and Tabaconas.

The separation of *ballux* from *pallidiventris* (Wetmore and Phelps, 1944, Proc. Biol. Soc. Washington, vol. 57, p. 11) left *pallidiventris* with a divided range, since no trenchant characters were found by which to recognize any further divisions, although the birds from Santa Marta, Colombia, were found to be slightly different in dorsal and ventral coloration. The material at hand from Santa Marta shows the slightly lighter dorsal coloration mentioned by the authors of *ballux* and in addition presents a noticeable difference in the development of white on the tail feathers. The subspecific separation of the Santa Marta birds appears justifiable. The description follows:

***Myioborus miniatus sanctaemartae*, new subspecies**

TYPE: From Las Nubes, Santa Marta, Colombia. No. 70525, American Museum of Natural History. Adult of unrecorded sex collected December 10, 1898, by Grace H. Hull.

DIAGNOSIS: Similar to *M. m. pallidiventris* of northeastern Venezuela in respect to the paleness of the yellow coloration of the lower under parts but differing by the reduction of white on the outer tail-feathers; blackish base of inner web of outermost rectrix always somewhat exposed beyond the tips of the under tail-coverts; dark inner margin of subexternal feather reaching farther distad on average; white tip of fourth quill (from middle) shorter and frequently not projected distad along outer web farther than the corresponding portion of the inner web, making a wedge-shaped patch; general dorsal coloration averaging paler gray.

RANGE: Presumably restricted to the Santa Marta Mountains of northern Colombia.

DESCRIPTION OF TYPE: Upper parts largely Slate Gray; forehead with short dusky shaft-streaks; center of crown and occiput occupied by a patch of Burnt Sienna × Chestnut, most of the feathers with narrow gray tips; upper tail-coverts blackish with fine gray tips; side of head Slate Gray including malar region; center of throat black; breast and abdomen Lemon

Chrome, slightly deeper on upper breast; sides of breast gray; extreme lateral margin of flanks gray with some olive tinge; longer under tail-coverts white; shorter ones yellow. Remiges dusky, with outer margins gray, narrowest on primaries but obsolete on outermost feather; upper wing-coverts Slate Gray with a fine whitish dot at tips of greater series; under wing-coverts dull whitish with a darker area near carpal margin; inner margins of remiges inconspicuously lighter than the rest of the inner webs. Tail with three middle pairs of rectrices blackish, with narrow white tips on the second and third pairs; fourth pair blackish, with a cuneate terminal patch of white about 14 mm. in length, with the apex of the triangle on the inner web; fifth pair with a broad blackish basal portion and diagonal white tip crossing the shaft between 25 and 27 mm. from the tip and ending 10 mm. from the tip on the inner web and 28 mm. from the tip on the outer web; outermost pair largely white, with the blackish basal area reaching within 11 mm. of the base on the outer web and 34 mm. from the base on the inner web where the black is exposed well beyond the tips of the under tail-coverts. Bill (in dried skin) black; feet dark brown. Wing, 62 mm.; tail, 59; exposed culmen, 7.9; culmen from base, 11.9; tarsus, 18.

REMARKS: Ten specimens from Santa Marta compared with 28 Venezuelan examples of *pallidiventris* show such consistent distinction in respect to the amount of white on the tail that the separation of the present form is definitely indicated. The geographical isolation of the Santa Marta Mountains from the area in Venezuela where *pallidiventris* occurs offers further weight to the distinction.

The characteristic cuneate tip on the fourth pair of rectrices (third from outside) of *sanctaemartae* is not shown in any of the examples of *pallidiventris*, and, although some examples of *sanctaemartae* have an extension of the pale tip basad along the outer web of the feather, it does not reach so far. Measurements taken of both series show the following figures:

In *pallidiventris*, from the base of the feather to the white tip, the distance on the outer web is 14–28 mm. (average, 21.4); on the inner web, 23–28 (average, 32.2). In *sanctaemartae*: outer web, 29–44 (average, 37.8); inner web, 40–50 (average, 44.4). In the series at hand there is no overlap.

The exposure of the dark basal inner margins of the outermost rectrices is not a constant criterion, for although this marking



seems to be exposed consistently in *sanctaemartae*, it is sometimes concealed and sometimes exposed (though less obviously) in *pallidiventris*.

The amount of white on the tip of the third pair of rectrices (fourth from outside) is less constantly different, but only one example of *sanctaemartae* shows more than a narrow terminal margin, and in this specimen the white area is only 3 to 3.5 mm. long. In *pallidiventris*, on the other hand, 24 of 29 adults have a pronounced patch or elongate stripe on these feathers. The character is thus of good correlative value.

Returning to a consideration of the southwest-Ecuadorian and northwest-Peruvian birds, I would note their similarity to *pallidiventris* in respect to the pattern of white markings on the rectrices, as well as in other features. In other coloration these birds most nearly resemble *pallidiventris* but show some approximation to *ballux*, although their range is not intermediate in any sense. They form a fairly consistent population with a combination of characters of their own, which appears to entitle them to separate recognition and I propose to name them as follows:

***Myioborus miniatus subsimilis*, new subspecies**

TYPE: From Alamor, Perú; altitude 4450 feet; No. 172201, American Museum of Natural History. Adult male collected August 22, 1921, by George K. Cherrie and Geoffrey Gill. Original no. 23651.

DIAGNOSIS: Similar to *M. m. pallidiventris* of northeastern Venezuela but back slightly duller gray; forehead and sides of crown with less frequent development of black centers on the feathers; chin and throat more broadly and more deeply black; sides of breast darker gray; yellow of breast and belly averaging a little deeper yellow though not so deep as in *ballux* or *verticalis*. Further differs from *ballux* by the lesser development of black on the forehead and sides of the crown, and from *verticalis* by the greater amount of black on the throat and the lesser extent of white on the tail.

RANGE: Southwestern Ecuador and northwestern Perú, on the Pacific slope of the Western Andes.

DESCRIPTION OF TYPE: Upper parts largely Deep Neutral Gray; center of crown and occiput with a broad patch of light Chestnut, paler at the bases of the feathers; forehead and sides of the crown with little development of dusky shaft-markings;

upper tail-coverts blackish with dark gray margins; sides of head somewhat blackish; malar region gray; chin and throat broadly deep black; breast and belly Lemon Chrome, deeper on the breast; sides of breast Blackish Slate; flanks slaty, merging into the yellow of the belly; under tail-coverts white with a slight yellowish tinge. Remiges blackish brown with outer margins narrowly dark gray, somewhat whitish on the outermost primary distally; inner secondaries with a narrow white terminal margin on the inner web (not constant in the series); upper wing-coverts blackish gray with faintly paler dots at the tips of the greater series; under wing-coverts white with a dark patch near the carpal margin which is white with a slight yellowish tinge; inner margins of remiges near Pallid Mouse Gray. Tail with two median rectrices blackish with fine white terminal points; third pair with a white patch on the tip of the outer web, about 10 mm. long, and withdrawn from the outer margin for the basal two-thirds of its length; inner web with only a narrow white terminal margin; fourth pair blackish with the outer web white to within 19 mm. of the base and with a diagonal patch of white on the inner web reaching the shaft 33 mm. from the base and on the inner margin 53 mm. from the base; fifth pair mostly white, with the dark basal area about 9 mm. from the base on the outer web and 25 mm. from the base at the shaft on the inner web and 40 mm. from the base at the inner margin; sixth pair similar, with the blackish basal area extending 7 mm. from the base on the outer web and 17 mm. from the base along the shaft on the inner web and 25 mm. on the inner margin. Bill (in dried skin) black; feet blackish brown. Wing, 63 mm.; tail, 63; exposed culmen, 8; culmen from base, 10; tarsus, 18.

REMARKS: Chapman (1926, Bull. Amer. Mus. Nat. Hist., vol. 55, p. 597) commented on the paler ventral coloration of the birds of western Ecuador in comparison with those from the eastern side of the Andes, and their lesser amount of black on the sides of the crown and the forehead, but did not venture to name them. The eastern birds, however, he referred to his *pallidiventris*, in which he also included birds from northern Perú which I believe cannot be clearly separated from *verticalis*. Southeast-Ecuadorian birds are also best assigned to *verticalis*, as I have stated earlier, while the north-Ecuadorian birds, from both sides of the Andes, belong to *ballux*. It is only in the southwestern part of Ecuador and northwestern Perú that the paler ventral

coloration and the relative reduction of black on the forehead and sides of the crown become well established.

There are no earlier Peruvian records that are assignable to *subsimilis*.

#### SPECIMENS EXAMINED

##### *M. miniatus pallidiventris*.—

###### VENEZUELA:

Quebrada Seca, 1 (?) (type);

(Cumaná, Los Palmales, Río Neveri, Santa Ana Valley, Montaña de Guácharo, Cotiza, Galipán, Cumbre de Valencia, El Limón, Mt. Bucarito, La Trinidad, El Guácharo, Colonia Tovar, Silla de Caracas, and La Latal), 10 ♂, 10 ♀, 9 (?).

##### *M. m. ballux*.—

###### VENEZUELA:

(Mérida, Escorial, Culata, Valle, and Hechisera), 10 ♂, 2 ♀, 6 (?).

###### COLOMBIA:

(San Antonio, near San Agustín, Las Lomitas, east of Palmira, Aguadita, El Roble, Tenasuca, Barro Blanco, Anolaima, Fusagasugá, Panamá (above Pacho), Antioquia, Subia, Santa Elena, Paramillo trail, La Candelá, Andalucia, Cali, Gallera, La Sierra, Río Toché, Primavera, Salento, Cerro Munchique, Popayán, Mari Lopez, La Palma, Torné, and Bogotá), 38 ♂, 30 ♀, 13 (?).

###### PANAMÁ:

Tacarcuna, 3 ♂, 2 ♀.

###### ECUADOR:

(Lower Sumaco, upper Sumaco, Oyacachi, Papallacta, San José, below San José, Baeza, Puente del Río Quijos, Mindo, Pichincha, Valle de Cumbaya, Mocha, and Ibarra), 21 ♂, 17 ♀, 4 (?).

##### *M. m. sanctaemartae*.—

###### COLOMBIA:

Santa Marta, Las Nubes, 6 (?) (including type);

El Líbano, 1 (?);

Valparaiso, 1 ♂, 1 ♀, 1 (?).

##### *M. m. subsimilis*.—

###### ECUADOR:

Guachanamá, 1 ♂;

Punta Santa Ana, 1 (?);

Zaruma, 2 ♂; 4 (?);

San Bartolo, 5 ♂;

Celica, 1 ♂, 3 ♀;

El Chiral, 2 ♂, 1 “?♀”;

Cocó, 1 ♂, 2 ♀.

###### PERÚ:

Alamor, 6 ♂ (including type), 4 ♀, 1 (?);

Cebollal, 1 ♂;

La Puente, 1 ♂;

Palambra, 1 ♂, 3 ♀, 2 (?);

Seques, 3 ♂, 2 ♀, 1 (?).

*M. m. verticalis*.—

ECUADOR:

Zamora, 1 “?♀”;

Sabanilla, 3 ♂;

Loja, 4 ♂, 1 ♀.

PERÚ:

Lomo Santo, 1 ♂, 1 ♀, 1 (?);

San Felipe, 1 ♀, 1 (?);

Huancabamba, 1 ♂, 1 ♀, 1 (?);

San Ignacio, 1 ♂;

Chaupe, 3 ♂, 1 ♀;

Uchco, 1 ♀;

Río Seco, 1 ♂, 1 ♀;

Hacienda Limón, 1 ♂<sup>1</sup>; 2 ♀<sup>1</sup>;

Nuevo Loreto, 1 (?);

Huachipa, 1 ♂<sup>1</sup>, 1 ♀<sup>1</sup>;

Utcuyacu, 1 ♂, 1 ♀;

San Ramón, 1 ♂;

Idma, 2 ♂, 2 ♀;

San Miguel Bridge, 1 ♀;

San Miguel, 1 ♀, 1 (?);

Huiro, 1 ♂;

Río Inambari, 3 ♂, 1 ♀;

Santo Domingo, 3 ♂, 2 ♀;

Inca Mine, 1 ♂.

BOLIVIA:

Roquefalta, 1 ♂, 1 “♀”;

Locotal, 1 ♀;

Yungas, Cochabamba, 6 ♂, 2 ♀;

Pulque, 1 “♀”.

VENEZUELA:

Mt. Duida, Agüita, 2 ♀;

Mt. Roraima, Arabupú, 1 ♂, 1 ♀.

BRITISH GUIANA:

Twek-quay, 1 ♀, 1 (?).

***Myioborus melanocephalus griseonuchus* CHAPMAN**

*Myioborus bairdi griseonuchus* CHAPMAN, 1927, Amer. Mus. Novitates, no. 250, p. 5—Taulis, northeast of Pacasmayo, Perú; ♂; Amer. Mus. Nat. Hist.

This form differs from *ruficoronatus* (including *bairdi*) of Ecuador by several characters, not all of which have been published. None of them is perfectly constant, but they are sufficiently so to justify the recognition of the subspecies. The black nuchal band is never strongly developed as in *ruficoronatus*,

<sup>1</sup> Specimens in Chicago Natural History Museum.



although there is sometimes a very fine black line in place of it or even, in one specimen at hand, a broader area that is dark at the tips of the feathers but not solidly black. In *ruficoronatus* there are in the series at hand only two birds without nuchal black; in almost all of the specimens the area is quite broadly black.

The sides of the face in *griseonuchus* are inclined to be less deeply black than in *ruficoronatus*, though not always so, and the third pair of rectrices from the outside more consistently show a more or less extensive white terminal patch, sometimes carried well basad, but these features can be matched in some examples of *ruficoronatus*. Also, the yellow eye-ring is almost always broken next to the lores in *griseonuchus* and almost always complete in *ruficoronatus*, although sometimes very narrow.

The range of *griseonuchus* appears to be quite restricted to the Western Andes of northern Perú and, although several birds from southern Ecuador (Loja, Salvias, and Taraguacocha) show approach toward its characters in one or more respects, they are closer to *ruficoronatus* where they undoubtedly belong. Peruvian records from Chota and Cutervo appear to belong to *griseonuchus*.

The study has involved the puzzling relationship of the bird described as "*Setophaga ruficoronata*" by Kaup ("1851" [= Oct., 1852], Proc. Zool. Soc. London, p. 49—no locality). DeSchauensee (1946, Notulae Naturae, no. 167, p. 7) has considered it to be no more than one extreme of individual variation of "*bairdi*" (*Setophaga bairdi* Salvin, 1878, Ibis, ser. 4, vol. 2, p. 317, pl. 8, fig. 1—Sical, Ecuador), and in view of the priority of the name, he has used *ruficoronatus* as the subspecific term with *bairdi* as a synonym.

I have two specimens of the *ruficoronatus* plumage from Oyacachi, Ecuador, and a good series of the much commoner "*bairdi*" plumage, including two birds also from Oyacachi. There is a surprising amount of individual variation in the "*bairdi*" assortment, especially in regard to the markings on the head. The dark extreme shows the forehead and anterior crown solidly black and the sides of the crown similarly broadly marked. The other extreme (still short of the "*ruficoronatus*" plumage) has the forehead and anterior crown yellow with black tips, the sides of the crown rather narrowly black, and the black patch on the lower part of the lores reduced or even absent. The two "*ruficoronatus*" specimens have the forehead and anterior part of the crown

clearer yellow, although in one specimen there are small black tips on some of the feathers, the black stripe above the yellow superciliary is withdrawn from above the anterior part of the orbit, and the black in the malar region and on the lores is slight. In one specimen, the yellow of the forehead has advanced posteriorly above the black stripe that still remains on the sides of the occiput as a forward extension of the black nuchal band.

These various characters are combined in different ways so that there are nearly as many degrees of intermediacy between extremes as there are specimens in the series. It appears, therefore, that it is not possible to maintain *ruficoronatus* and *bairdi* as distinct species nor yet, in view of the occurrence of both types of plumage in single localities, to regard them as subspecies. The full extreme of typical *ruficoronatus* occurs only in northernmost Ecuador and southernmost Colombia, but there are approaches to it throughout the range of "*bairdi*." Northward from the range of the species, there occurs the closely allied *ornatus* with its two subspecies, *o. ornatus* and *o. chrysops*. The extreme characters of *ruficoronatus* strongly suggest those of the *ornatus* group, and an occasional specimen of *o. chrysops* shows a noticeable patch of rufous in the center of the crown, strongly suggesting *ruficoronatus*. It is not impossible, therefore, that the puzzling specimens of one sort and another may represent intergrades or even hybrids between the two groups, but much more material will be necessary before an adequate solution is reached. If the type of *ruficoronatus* actually came from near Cali as claimed by various authors, beginning with Salvin (1878, *Ibis*, p. 316), the ranges of that form and *chrysops* must overlap. No confirmation has appeared in the field work of recent collectors.

At present, therefore, I accept deSchauensee's arrangement and adopt *ruficoronatus* as the subspecific term for the Ecuadorian and extreme southwest-Colombian population including the birds heretofore separated as "*bairdi*."

This discussion was undertaken largely because of the inclusion of Perú in the range of *ruficoronatus* by Sharpe (1885, *Catalogue of the birds in the British Museum*, vol. 10, p. 425). No exact locality, reference to an earlier citation of such, or specimen in the collection from Perú is given, and I can conclude only that "Perú" was cited in error.

Additional Peruvian records that appear to be assignable to

*griseonuchus* are from Chota and Cutervo, on the eastern side of the Western Andes.

Birds from across the Marañón, in the Central Andes of northern Perú, have been assigned by authors to the central-Peruvian form, *melanocephalus*, but there are certain positive distinctions that I believe warrant the separation of these birds, as described below:

***Myioborus melanocephalus malaris*, new subspecies**

TYPE: From La Lejia, north of Chachapoyas, Perú; altitude about 9000 feet. No. 235067, American Museum of Natural History. Adult male collected February 28, 1925, by Harry Watkins; original no. 8845.

DIAGNOSIS: Nearest to *M. m. melanocephalus* of central-southern Perú, but differs by having the yellow eye-ring separated from the yellow throat by a complete blackish malar stripe that connects the lores and the auriculars; yellow eye-ring broadly interrupted in front of the eye by the incursion of the blackish loreal spot.

RANGE: Central Andes of northern Perú in the general neighborhood of Chachapoyas.

DESCRIPTION OF TYPE: Anterior part of forehead and broad eye-ring (interrupted anteriorly) Lemon Chrome × Light Cadmium; posterior part of forehead, crown, and occiput glossy black; hind neck and mantle Deep Neutral Gray; rump a little lighter; upper tail-coverts blackish. Lores blackish, interrupting the yellow eye-ring, and continued as a rather broad black malar stripe under the eye-ring to the blackish auriculars and upward behind the circumocular ring to connect with the hinder part of crown; most of under parts Lemon Chrome × Light Cadmium, deepest on the throat and chest, paler on the lower belly; under tail-coverts much paler, near Marguerite Yellow; sides of breast dusky gray adjoining the mantle, and flanks with gray stripes; thighs gray. Exterior surface of wings gray like the mantle; inner margins of remiges dull whitish; under wing-coverts whitish, sometimes yellowish distally; carpal margin yellow with a grayish area at the base of the primaries. Tail with outermost pair of rectrices white except for a grayish area at base, reaching out a third of the way distad on the inner web; next pair with basal gray more extensive and with a trace of blackish on outer margin near the tip; third pair largely blackish, with a white stripe along

the shaft on the outer web, invading the inner web about a third of the way to the tip; remainder of tail black. Bill (in dried skin) blackish; feet dark brown. Wing, 71 mm.; tail, 67; exposed culmen, 9; culmen from base, 13; tarsus, 19.

REMARKS: Females similar but averaging smaller. Wing, 65–65.5 (average 65.2); tail, 61.5–64 (average, 62.8); males, wing, 65–72.5 (average, 69.1); tail, 63–67.5 (average, 65.2).

Young birds have the whole upper parts and sides of the head brownish gray, the throat dull buff, and the breast buffy brown.

The uninterrupted blackish malar stripe is found in *griseonuchus* but not in *melanocephalus*, and *malaris* thus shows one of the important characters indicating relationship between the two first-mentioned forms. I called attention to this distinction from *melanocephalus* in an earlier paper (1930, Field Mus. Nat. Hist., zool. ser., vol. 17, p. 426). At the same time I noted a specimen from Molinopampa with traces of brown on the basal margins of the crown feathers. This same marking is shown by one of the males at hand from La Lejia, emphasizing the suggested intermediacy.

The only locality of record assignable to *malaris*, from which I have not seen material, is Tamiapampa.

### ***Myioborus melanocephalus melanocephalus* (Tschudi)**

*S[etophaga] melanocephala* TSCHUDI, 1844 (May), Arch. Naturgesch., 10th year, vol. 1, p. 276—Perú; I propose Maraynioc, Junín, as type locality; Neuchâtel Mus.

The birds from central Perú have the yellow eye-ring connected with the yellow throat by a broad vertical bar, sometimes occupying the whole terminal part of the feathers concerned but sometimes with a narrow dark terminal margin beyond the yellow. The ventral coloration is about as deep yellow as in *malaris* and deeper than in most *griseonuchus*. The color of this area is deeper than in *bolivianus*, and the extent of white on the third pair of rectrices (from the outside) is somewhat greater, although there is no sharp definition in this latter respect.

Birds from the Urubamba Valley show the strongest development of the subocular yellow bar of any segment of the population. The character is of variable occurrence in *bolivianus*.

Records assignable to *melanocephalus* are from Garita del Sol, Vitoc, Pumamarca, Higos, Ropaybamba, and Hacienda Huarapa (Huánuco). Records from various localities in extreme south-



eastern Perú are discussed under *bolivianus* to which I believe they belong.

### ***Myioborus melanocephalus bolivianus* Chapman**

*Myioborus melanocephalus bolivianus* CHAPMAN, 1919 (Dec. 31), Proc. Biol. Soc. Washington, vol. 32, p. 365—Incachaca, Bolivia; ♂; Amer. Mus. Nat. Hist.

I believe that the birds from southeastern Perú are better assigned to *bolivianus* than to *melanocephalus*, although they are, as Chapman indicated, somewhat intermediate in respect to the amount of white on the third outer pair of rectrices. In the depth of yellow on the under parts (lighter than in *melanocephalus*), they are definitely closer to *bolivianus*, and this feature is less variable than is the amount of white on the tail although subject also to some variation.

Chapman (*loc. cit.*) reported *bolivianus* to have a shorter wing and longer tail than *melanocephalus*, but the average difference is not very pronounced and the overlap is great. In these particulars, the southeast-Peruvian series is somewhat anomalous since it has both wing and tail shorter than in either the Bolivian or central Peruvian specimens, again on average. The following figures show the measurements of the birds examined:

		WING	TAIL
Bolivia	6 ♂	65.5–70.5 (67.6)	63.0–68.5 (66.1)
Southeastern Perú	9 ♂	65.0–69.0 (65.5)	59.0–64.0 (61.5)
Central Perú	15 ♂	62.5–73.0 (69.4)	58.0–68.5 (64.7)
[Central Perú	14 ♂	68.0–73.0 (69.2)	63.0–68.5 (64.5)]
Bolivia	13 ♀	63.0–66.5 (64.8)	61.0–67.0 (63.3)
Southeastern Perú	3 ♀	61.0–65.0 (62.3)	58.0–63.0 (60.3)
Central Perú	10 ♀	62.0–70.0 (66.5)	63.0–66.5 (64.1)
[Central Perú	11 ♀	62.0–70.0 (66.2)	58.0–66.5 (63.6)]

Included in the central Peruvian series of males is a single bird with unusually small measurements which may be a wrongly sexed female. I have given in square brackets the range of measurements and the averages with this specimen transferred to the series of females, but although this transfer alters the minimum dimensions ascribed to the two sexes of *melanocephalus*, it does not significantly alter the averages or the belief that the difference of size in the two forms is not positive enough to form a very useful criterion of distinction. I am unable to find any noticeable difference in the length of the bill which was believed

by Chapman to be longer in *bolivianus* than in the central Peruvian form.

Records that I believe should be placed with *bolivianus* are from Marcapata and "Chachupata" (=Ccachupata or Cachupata).

#### SPECIMENS EXAMINED

##### *M. m. ruficoronatus*.—

###### ECUADOR:

(Canzacota, above Milligalli, Papallacta, Asilan, Salvias, above Baeza, Gualea, Tambillo, Cayambe, Yanacocha, Pichincha, Corazón, Loja, Taraguacocha, upper Sumaco, Puente Onda, Zuñac, lower Río Sardinas, Urbina, and Oyacachi), 24 ♂, 26 ♀, 9 (?).

##### *M. m. griseonuchus*.—

###### PERÚ:

Taulis, 3 ♂ (including type), 2 ♀;  
Chugur, 4 ♂, 2 ♀;  
El Tambo, 1 (?).

##### *M. m. malaris*.—

###### PERÚ:

La Lejia, 2 ♂ (including type), 3 ♀, 2 (?);  
San Pedro, 3 ♂, 1 ♀;  
Chachapoyas, 1 ♂, 1 ♀;  
Leimebamba, 2 ♂;  
Molinopampa, 1 ♂<sup>1</sup>, 1 ♀<sup>1</sup>, 1 (?)<sup>1</sup>.

##### *M. m. melanocephalus*.—

###### PERÚ:

Mountains above Huánuco, 1 ♂<sup>1</sup>, 1 ♀<sup>1</sup>;  
above Panao, 2 ♂<sup>1</sup>, 2 ♀<sup>1</sup>;  
Maraynioc, 1 ♂;  
Rumicruz, 4 ♂, 2 ♀;  
Chilpes, 4 ♂, 2 ♀;  
Huacapistana, 1 ♂;  
Chanchamayo, 1 ♂;  
Santa Rita, Urubamba, 2 ♂;  
Torontoy, 2 ♀, 1 ?♀;  
San Miguel, 1 ♂, 1 ♀, 1 ?♀, 2 (?).

##### *M. m. bolivianus*.—

###### PERÚ:

Santo Domingo, 6 ♂, 2 ♀;  
Inca Mine, 2 ♂, 1 ♀;  
Oconeque, 1 ♂.

###### BOLIVIA:

Río Aceramarca, 1 ♀;  
Cocapata, 2 ♂;  
Incachaca, 5 ♂, 13 ♀.

<sup>1</sup> Specimens in Chicago Natural History Museum.

*M. o. ornatus*.—

COLOMBIA:

(Chipaue, El Dosena, Subia, El Roble, Choachi, El Piñon, Palo Hueco, Anolaima, "Bogotá", and unspecified), 4 ♂, 4 ♀, 14 (?).

*M. o. chrysops*.—

COLOMBIA:

(Cocal, Valle de las Papas, west of Popayán, above Salento, LaGuneta, Antioquia, El Eden, Santa Elena, and "Bogotá"), 9 ♂, 5 ♀, 5 (?).

### ***Basileuterus nigro-cristatus* (Lafresnaye)**

*Trichas nigro-cristatus* LAFRESNAYE, 1840, Rev. Zool., vol. 3, p. 230—Santa Fé de Bogotá, Colombia; Mus. Comp. Zoöl.

*Myiodiodes meridionalis* PELZELN, 1882, Verhandl. Zool. Bot. Gesellsch. Wien, vol. 32, p. 446—Ecuador; Vienna Mus.

*Basileuterus nigrivertex* SALVIN, 1895, Novitates Zool., vol. 2, p. 3—Cajabamba, Succha, and Huamachuco, Perú; Brit. Mus.

Succha, 1 (?); Cajabamba, 1 ♂, 2 ♀; Huamachuco, 1 ♀; San Pedro, 2 ♀; Chugur, 2 ♂, 2 ♀; Taulis, 1 ♀; El Tambo, 1 ♀.

I find it impossible to maintain *nigrivertex* as a distinct subspecies in spite of the fact that it shows a certain extreme divergence from the average characteristics of more northern populations. The Peruvian birds tend to have the black of the cap carried a little less far posteriad, and apparently never have so elongate an area as some of the more northern birds, but the latter are far from uniform in this respect and frequently match the Peruvian birds.

The supposedly lighter or brighter olive of the back in "*nigrivertex*" is matched by many birds from Ecuador, Colombia, and Perú and does not hold as a valid criterion for distinction. The lengths of wing and tail have some geographical significance, but it is difficult to make satisfactory use of the figures. The Ecuadorian series shows an average of shorter wing and tail than the Colombian birds, but there is considerable overlapping. The Peruvian specimens have an average of longer wing and tail than the Colombian population, but again there is much overlapping. Between the Peruvian and the Ecuadorian series, there is a little overlapping in wing length but apparently definite distinction in respect to tail length, but neither the Ecuadorian nor Peruvian birds can be clearly distinguished from Colombian ones although at opposite ends of the scale of variation from each other. Venezuelan birds are not significantly different from the Colombian. A few figures will show the trends.

		MALES		FEMALES	
		Wing	Tail	Wing	Tail
Venezuela	8♂, 8♀	60.5-63.5	56.5-64.5	54.0-63.0	56.0-60.0
Colombia	6♂, 7♀	61.0-66.0	58.0-66.0	57.0-62.5	55.0-63.0
Ecuador	12♂, 2♀	56.0-64.0	51.5-60.0	56.0-57.0	54.0-56.0
Perú	9♂, 8♀	63.0-69.5	63.5-68.0	58.0-62.5	57.0-66.0

In view of the pattern of distribution shown by these measurements, I believe it is best to consider the species as not clearly divisible into subspecies. The still more southern form *euophrys*, considered by Hellmayr and others as belonging to this specific group, is not a conspecies of *nigro-cristatus* but belongs with *luteoviridis*, under which it is discussed in detail.

The *Succha* specimen (without sex) and one of the Cajabamba females are inscribed "Cotype" [of *nigrivertex*], but their exact status in this regard is questionable. No specimen without sex is listed in the original account, where the single *Succha* example is noted as a male. The specimen at hand, therefore, is doubtfully even a paratype, although the Cajabamba female may be such. The type itself is noted by Hellmayr (1935, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 8, p. 478) as being in the British Museum.

Additional records of *nigro-cristatus* are from Cullcui (specimens examined), Chachapoyas (sight record), and Cutervo. I have seen examples also in the Academy of Natural Sciences of Philadelphia from Palambra, Leimebamba, and Cochabamba (Dept. Libertad).

### ***Basileuterus luteoviridis striaticeps* (Cabanis)**

*Myiothlypis striaticeps* CABANIS, 1873, Jour. f. Ornith., vol. 21, p. 316—Maraynioc, Perú; ♂; Berlin Mus.

*Basileuterus luteoviridis superciliaris* CHAPMAN, 1919 (Dec. 31), Proc. Biol. Soc. Washington, vol. 32, p. 265—above Torontoy, Urubamba Cañon, Perú; ♂; U. S. Natl. Mus.

Specimens from the northern part of Perú show no approach toward typical *luteoviridis*, being even a little clearer olive above than the average bird from the Junín region. The difference is very slight and not constant, and no subspecific distinction is evident.

The case of "*superciliaris*" presents a somewhat similar problem. Todd (1929, Proc. U. S. Natl. Mus., vol. 74, art. 7, p. 48) was unable to recognize it, while Hellmayr (1935, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 8, p. 480) considered it distinguishable.



I have examined the four known Urubamba Valley examples of the species, including the type of "*superciliaris*," and am inclined to agree with Todd. Two of the specimens that are noticeably browner than central and north-Peruvian examples of *striaticeps* are not fully adult, showing, among other features, a trace of tawny edges near the tips of the greater upper wing-coverts, not found in adults. The type and one other specimen are adult and may be matched in the series of *striaticeps*, although the average color of the latter is darker, but not greener, than that of the two adult Urubamba birds. In any case, there is no assurance of clear distinction, and until a larger series of Urubamba birds is available, it seems best to consider "*superciliaris*" as a synonym of *striaticeps*.

It should be noted in passing that two males from Almaguer, Colombia, recorded by Chapman (1917, Bull. Amer. Mus. Nat. Hist., vol. 36, p. 550) as *luteoviridis*, to which deSchauensee (1946, Notulae Naturae, no. 167, p. 8) also refers Almaguer examples, are somewhat closer to *quindianus* (deSchauensee, *loc. cit.*) than to the nominate form. The yellow of the under parts is less intense than in *luteoviridis*, the flanks are a little lighter olive brown, and the superciliary stripe is weaker and less deeply and clearly yellow. They are not so extreme in these respects as Laguneta and Toch  (Tolima) specimens of *quindianus* but are intermediate between them and *luteoviridis*; but I believe they are better associated with *quindianus* than with the typical subspecies, an assignment that furthermore is in good accord with the geographical position of Almaguer.

### ***Basileuterus luteoviridis euophrys* Sclater and Salvin**

*Basileuterus euophrys* SCLATER AND SALVIN, 1876, Proc. Zool. Soc. London, p. 352—Tiltilo, Prov. Yungas, Bolivia; ♂, ♀ cotypes in Brit. Mus.

This form was considered by Hellmayr (1924, Arch. Naturgesch., div. A, vol. 90, no. 2, p. 157) as conspecific with *nigrocristatus*, but I fail to trace the supposed relationship. *Nigrocristatus* has various points of distinction. The black loreal patch is small, barely reaching the base of the bill, whereas in *euophrys* it extends at least halfway from the gape to the nostril and sometimes rounds the anterior end of the superciliary stripe to meet the central coronal stripe. The yellow superciliary stripe is in immediate contact with the upper border of the orbit, whereas in *euophrys* the blackish loreal patch extends posteriad in a narrow

line over the orbit to meet the dusky postocular space. There is a prominent yellowish lunule just below the eye which is diffuse or absent in *euophrys*. There is a semi-elongate black crest that is medial, whereas the blackish coronal feathers of *euophrys* are lateral. The bill is flatter and with a little straighter culmen than in *euophrys*. The feet of *nigro-cristatus* are usually paler and the rictal bristles less strongly developed.

In all these respects, *euophrys* agrees exactly with the members of the *luteoviridis* group. It has the dusky lateral crown stripes more prominent than in the other members of the group, and forming a broad V-shaped pattern of black or dusky olive, though apparently always with a median olive stripe on the occiput and most of the crown. The superciliary stripe is wider than in *luteoviridis luteoviridis* but about as in *l. striaticeps*, although a little more pronounced posteriorly. The dusky postocular patch is more strongly developed and often more deeply blackish, as are the lores, than in *striaticeps* where, however, it is stronger than in *luteoviridis*. These distinctions are all modifications of the same basic pattern and do not necessitate the decided saltation demanded by consideration of *euophrys* as a conspecies of *nigro-cristatus*.

There are no earlier published records of *euophrys* from Perú, although my specimen from Limbani was collected (by Ockenden) in 1904. As with *striaticeps* and *luteoviridis*, there is some variation in the clarity of the olive coloration of the back, and three of the Peruvian birds at hand are a little browner in tone than the fourth specimen which is like the Bolivian examples. Likewise the greatest amount of black on the head is found in one of the Bolivian birds and the least in one of the Peruvian, but the rest are irregularly distributed in that respect. I see no reason to attempt to separate the Peruvian birds from the Bolivian.

#### SPECIMENS EXAMINED

##### *B. l. luteoviridis*.—

###### COLOMBIA:

(Almaguer, Subia, Choachi, Anolaima, Fomeque, "Bogotá"), 1 ♂, 1 ♀, 5 [? ♂], 4 [? ♀], 2 (?).

###### ECUADOR:

(Upper Sumaco, above Baeza, Zuñac, Tambillo), 3 ♂, 3 ♀, 2 [? ♂], 1 [? ♀], 1 (?).

##### *B. l. quindianus*.—

###### COLOMBIA:

Laguneta, 1 ♂;

Almaguer, 2 ♂;

Toché, Tolima, 1 ? ♂<sup>1</sup>, 2 ♀<sup>1</sup>, 1 ? ♀<sup>1</sup>.

*B. l. richardsoni*.—

COLOMBIA:

Coast range west of Popayán, 1 ♂ (type), 3 ♀, 1 (?).

*B. l. striaticeps*.—

PERÚ:

La Lejia, 1 ♂, 1 ♀ ;

Leimebamba, 1 ♂<sup>1</sup>, 2 ♀<sup>1</sup> ;

Utcubamba, 1 ♂<sup>1</sup> ;

Compan, 1 [ ? ♀ ] ;

Maraynioc, 3 ♂, 3 ♀ ;

Rumicruz, 1 ♂, 1 ♀ ;

Huacapistana, 5 ♀<sup>1</sup> ;

Torontoy, 1 ♂, 1 ♂<sup>2</sup> (type), 1 ♀<sup>2</sup> ;

Cedrobamba, 1 ♀ .

*B. l. euophrys*.—

PERÚ:

Limbani, 1 ♀ ;

below Limbani, 1 ♀ ;

Oconeque, 1 ♂<sup>1</sup>, 1 ♀<sup>1</sup> .

BOLIVIA:

Sandillani, 1 ♂, 1 (?);

Unduavi, 2 (?).

### ***Basileuterus signatus signatus* Berlepsch and Stolzmann**

*Basileuterus signatus* BERLEPSCH AND STOLZMANN, 1906 (Sept.), *Ornis*, vol. 13, p. 74—part; Idma, Urubamba Valley; ♀ ; Warsaw Mus.

Six birds from the Junín region of central Perú suggest the possibility of distinguishing another form from that area. Five of them are slightly grayer olive in tone on the upper parts and three of them are paler yellow on the under side, but two of the five are hardly different below while the sixth bird is like Urubamba specimens in all particulars. I hesitate, therefore, to do more at this juncture than point out the characters noted and await additional material from Junín before attempting to establish a new subspecies.

Additional records of *signatus* are from Idma and Garita del Sol.

### ***Basileuterus signatus flavovirens* Todd**

*Basileuterus signatus flavovirens* TODD, 1929, *Proc. U. S. Natl. Mus.*, vol. 74, art. 7, p. 45—Incachaca, Bolivia; ♂<sup>1</sup> ; Carnegie Mus.

<sup>1</sup> Specimens in Academy of Natural Sciences of Philadelphia.

<sup>2</sup> Specimens in the United States National Museum, Washington, D. C.

Birds from southeastern Perú are referable to the Bolivian form which has somewhat brighter or more citrine olive upper parts and deeper yellow superciliary stripes and under parts than typical *signatus*.

Additional records are from the Marcapata Valley and "Chuhuasi" (= Uruhasi).

The characters distinguishing *signatus* and *flavovirens* from *flaveolus* of southern and eastern Brazil and northern Venezuela are almost all of such a nature that specific union is strongly suggested. *Flaveolus* has a rather consistently longer bill and reaches a somewhat greater extreme in lengths of wing and tail (although specimens may be matched in these respects in both groups), and in addition it has the general coloration, including that of the bill and feet, lighter and clearer than in the *signatus* group. The dark lateral crown stripes are even suggested in some examples of *flaveolus*, although in most cases they are quite lacking. The general style of coloration and the general proportions are not notably different in the two groups. It is to be noted, however, that *flaveolus* has a somewhat different wing formula, with the ninth (outermost) primary subequal to the second, and the eighth longer than the fourth, sometimes longer than the fifth. In the *signatus* group, on the other hand, the ninth primary is the shortest of all, and the eighth is subequal to the second, rarely to the third. One specimen of *flaveolus* from Galipán, Venezuela, approaches *signatus* in this particular.

The distribution of the two groups is also significant, for while *flaveolus* is found for the most part at lower elevations than *signatus*, it is largely on the more elevated portions of the terrain such as the Matto Grosso plateau and does not descend into the Amazonian plain. Thus while I shall not propose full specific union at present, I believe that the relationship of *flaveolus* and *signatus* should be recognized as quite close.

If *flaveolus* were an inhabitant of the southern Temperate Zone, it might be postulated that the longer wing-tip and lengthened outer primaries indicated a migratory behavior and that the records from extreme northern Venezuela concerned wintering individuals, but the northern specimens now at hand were taken in January, February, August, and September, while every month in the year is represented in the southern collections. The curiously interrupted distribution of *flaveolus* is, therefore, hardly to be explained on that basis. In this connection it is interesting

to call attention to two specimens recorded herewith from Frechal, Rio Surumú, northern Brazil—the first, I believe, to help to bridge the gap between northern Venezuela and the Province of Maranhão, eastern Brazil. A male from Río Zulia, west of Cúcuta, Colombia, presented by Brother Nicéforo Maria, furnishes a northwestern extension of range and the first record of *flaveolus* from Colombia.

#### SPECIMENS EXAMINED

##### *B. s. signatus*.—

###### PERÚ:

- Chilpes, 1 ♂;
- Rumicruz, 3 ♂;
- Huacapistana, 1 ♂<sup>1</sup>, 1 ♀;
- Torontoy, 1 ♂, 1 ♀;
- Santa Rita, 1 ♂, 3 ♀;
- San Miguel, 2 ♂, 2 ♀.

##### *B. s. flavovirens*.—

###### PERÚ:

- Marcapata, 1 ♀;
- Oconeque, 1 ♂, 1 ♂<sup>1</sup>;
- Santo Domingo, 3 ♂, 1 ♀;
- Inca Mine, 1 ♂, 1 ♀.

###### BOLIVIA:

- Incachaca, 2 ♂, 1 ♀, 1 ?♀, 1 (?);
- Yungas, 1 (?);
- Río Aceramarca, 1 (?).

##### *B. flaveolus*.—

###### BOLIVIA:

- "Woods," Province of Sara, 1 ♂.

###### BRAZIL:

- Matto Grosso (Chapada, Urucum, Utiarity, Descalvados), 24 ♂, 9 ♀, 2 (?);
- Ceará (São Pedro do Cariry, Lavras), 1 ♂, 1 (?);
- Bahia (Sincorá, Bahia, "Bahia"), 4 ♂, 1 ?♂, 2 ♀, 4 (?);
- Goiáz, Rio Araguaya, 1 ♀;
- Piauíhy (Therezina, Bello Horizonte, Patos, Gilbues, Urussuhy, Parnaguá, Correntes), 1 ♂, 4 ♀, 2 (?);
- Pernambuco (Garanhuns, Brejão), 1 ♂, 1 ?♀;
- Maranhão (São João dos Patos, As Mangueiras, São Luiz), 2 ♂, 1 ♀, 2 (?);
- Rio Surumú, Frechal, 1 ♂, 1 ♀.

###### PARAGUAY:

- Zanja Morotí, 3 ♂, 1 ♀;
- Fort Wheeler, 1 ♀.

###### VENEZUELA:

- Las Quiguas, 1 ♂;

<sup>1</sup> Specimens in the Academy of Natural Sciences of Philadelphia.

El Limón, 2 ♂;  
Mt. Bucarito, Tocuyo, 1 (?);  
Galipán, 1 ♀.  
COLOMBIA:  
Río Zulia, west of Cúcuta, 1 ♂.

**Basileuterus bivittatus bivittatus** (D'Orbigny and Lafresnaye)

*M[uscicapa] bivittata* D'ORBIGNY AND LAFRESNAYE, 1837, Mag. Zool., vol. 7, cl. 2, p. 51—part; Yungas, rep. Boliviana [= Carcuata (= Circuata)], Yungas of La Paz; ♂; Paris Mus.

The characters noted by Hellmayr (1935, Field Mus. Nat. Hist., zool. ser., vol. 13, pt. 8, p. 487, footnote) as peculiar to southeast-Peruvian birds do not hold true in a larger series from that area, especially in comparison with birds from the La Paz and Cochabamba regions of Bolivia, the former of which are topotypical of *bivittatus*. They have more significance when comparison is made with examples from southern Bolivia and northern Argentina where the population is recognizably distinguishable, as is described below. Peruvian birds appear to be inseparable from true *bivittatus*.

The typical form of the species thus ranges from southeastern Perú through the Yungas of La Paz to the neighborhood of Cochabamba, Bolivia, without any obvious distinctions. The localities are all on the northern slope of the Andean range that extends eastward in this region, in Upper Tropical Zone forests.

Additional Peruvian records are from Huaynapata and Callanga.

**Basileuterus bivittatus argentinae**, new subspecies

TYPE: From Ledesma, Province of Jujuy, Argentina; altitude 520 meters. No. 505681, American Museum of Natural History. Adult male collected July 7, 1906, by Luis Dinelli; original no. 4124.

DIAGNOSIS: Similar to *B. bivittatus bivittatus* of Cochabamba and La Paz regions of Bolivia and southeastern Perú, but differing by lighter dorsal coloration, lighter sides of the head, sides, and flanks, more prominent yellow supraloral stripe, somewhat less deeply black lateral crown-stripes, and paler rufescent central crown-patch which is more frequently strongly yellow.

RANGE: Northwestern Argentina in the Provinces of Jujuy and Salta, probably to Tucumán, extending northward into



adjacent parts of southeastern Bolivia as far as southwestern Santa Cruz.

DESCRIPTION OF TYPE: Center of the top of the head occupied by a patch of rufous feathers, near Mars Yellow, with brighter yellow bases and fine grayish olive tips; this patch bordered laterally by a broad sooty blackish stripe on either side, converging at the base of the bill and extending posteriad to the sides of the nape; feathers of these stripes finely tipped with olive; center of nape and most of the back dark Citrine, becoming lighter and brighter, near Citrine, on the uropygium and upper tail-coverts. Lores with a triangular dusky patch in front of the eye surmounted by a prominent yellow stripe reaching broadly to the orbit and continued narrowly on the upper eyelid above which the superciliary stripe of dark Citrine (with faint traces of yellow flecks) continues over the auriculars; a small indistinct postocular line present; lower eyelid feathers yellow; malar region and auriculars Citrine with yellower shaft streaks. Under parts largely Lemon Chrome, becoming tinged with light Citrine on the sides of the breast and light brownish Citrine on the flanks. Remiges brown, with exposed outer margins and the margins of the upper wing-coverts like the back; under wing-coverts pale yellow except for a brownish patch at base of primaries; inner margins of remiges narrowly whitish except toward tips of outer primaries and on the tertials. Tail Citrine, brighter on outer margins. Bill (in dried skin) blackish brown; feet pale brownish. Wing, 68 mm.; tail, 60; exposed culmen, 10; culmen from base, 14.5; tarsus, 23.

REMARKS: Females much like the males in coloration, perhaps with the dark lateral crown-stripes averaging duller and less blackish; size smaller—wing, 58.8–65 (male, 64–70.3); tail, 53.2–57 (male, 56–64).

Although the birds listed below from Samaipata, Monos, and Bermejo, Santa Cruz, are from localities in the Amazon drainage, they are just as definitely separable from *bivittatus* (also from the Amazon drainage) as are specimens from southern Bolivia, in the Río Pilcomayo drainage. As was found to be the case with *Chlorospingus ophthalmicus* (cf. Amer. Mus. Novitates, 1947, no. 1367, p. 3), the position of the localities in the great bend of the Río Grande is influenced more by the fact that they are on the dry southern slope of this eastern extension of the Andes than that the rivers of that area eventually, after making a broad sweep,

turn northward and find their way into the Río Mamoré and eventually the Amazon. The northern slope—in the range of *bivittatus*—is much more humid.

The Bolivian specimens in the series at hand that I refer to *argentinae* are a little more greenish olive above and less buffy on the under parts than the Argentine examples and have the dark lateral crown-stripes a little deeper black, although they still resemble the Argentine examples more than they do typical *bivittatus*. The Argentine specimens are a few years older in point of collection than the Bolivian, but it is uncertain that the difference is due to postmortem change; I can find no similar change apparent in specimens of the allied *B. b. roraimae* of even greater age. Moreover, one of the Argentine birds was collected on the Río Bermejo, Province of Salta, and two of the Bolivian series were taken on the same river a little higher upstream. They show the distinctions mentioned, but subspecific separation in this case would be very unlikely. I prefer therefore to assign the southeast-Bolivian specimens to *argentinae* rather than to attempt further subdivision.

#### SPECIMENS EXAMINED

##### *B. b. bivittatus*.—

###### PERÚ:

Río Inambari, 1 ♂, 1 ♀, 1 (?);  
La Oroya, 2 ♂, 1 ♀, 2 ♂<sup>1</sup>, 2 ♀<sup>1</sup>;  
La Pampa, 1 ♂<sup>1</sup>.

###### BOLIVIA:

Calabatea, La Paz, 3 ♂<sup>1</sup>;  
Yungas, Cochabamba, 1 ♀;  
Palmar, Cochabamba, 3 ♂<sup>1</sup>, 1 ♀<sup>1</sup>.

##### *B. b. argentinae*.—

###### BOLIVIA:

Monos, Santa Cruz, 2 ♂;  
Bermejo, Santa Cruz, 4 ♂, 2 ♀;  
Samaipata, 2 ♂<sup>1</sup>;  
Lagunillas, 1 ♂<sup>1</sup>;  
Río Azero, Chuquisaca, 1 ♂<sup>1</sup>;  
Bermejo, Tarija, 1 ♂<sup>1</sup>, 1 ♀<sup>1</sup>;  
Entre Ríos, 1 ♀<sup>1</sup>;  
Río Lipeo, 4 ♂<sup>1</sup>, 2 ♀<sup>1</sup>, 1 (?)<sup>1</sup>.

###### ARGENTINA:

Ledesma, Jujuy, 3 ♂ (including type), 3 ♀;  
Río Bermejo, Salta, 1 ♂;

<sup>1</sup> Specimens in Academy of Natural Sciences of Philadelphia.

Yacuiba ("S. Bolivia" = Salta, Argentina), 1 ♂.

*B. b. roraimae*.—

VENEZUELA:

Roraima, 2 ♂, 4 ♀, 1 (?);

Arabupu, 12 ♂, 6 ♀;

Paulo, 2 ♂;

Mt. Auyan-tepui, 1 ♀, 2 (?);

Mt. Duida (Agüita, Laterite Valley, Primer Pico, Cumbre de Cabeceras),  
5 ♂, 3 ♀, 1 (?).

BRITISH GUIANA:

Twek-quay, 1 ♂;

Bartica, 1 ♀<sup>1</sup>.

### ***Basileuterus chrysogaster chrysogaster* (Tschudi)**

*S[etophaga] chrysogaster* TSCHUDI, 1844 (May), Arch. Naturgesch., 10th year, vol. 1, p. 276—Perú; Chanchamayo suggested by Hellmayr, 1920; Mus. Neuchâtel.

*Basileuterus diachlorus* CABANIS, 1873, Jour. f. Ornith., vol. 21, p. 316—Amable Maria, Perú; ♂; Berlin Mus.

The question of relationship between the *chrysogaster* group and the *bivittatus* group is not easy to answer. The two groups have not been taken at the same exact localities, although both occur in the southeastern part of Perú, and there appears to be no altitudinal segregation.

The two groups are very much alike in general appearance. While the Bolivian and north-Argentine members of *bivittatus* have greenish tails and *c. chrysogaster* has a grayish brown one (except on the margins), the southeast-Peruvian population of *bivittatus* has a noticeable tinge of brown and *chrysogaster chlorophrys* of western Ecuador again has a greenish tail.

Likewise, *c. chrysogaster* has a definite yellow superciliary stripe carried over the auriculars, while *c. chlorophrys* agrees with *bivittatus* in all parts of its range in having the yellow line over the lores but not over the orbit and auriculars. Again, *c. chrysogaster* has a broad, if diffuse, yellow subocular lunule, whereas *bivittatus* has a smaller but sharper yellow mark in that area and *c. chlorophrys* has little or no yellow below the eye.

The dark lateral crown stripes in *c. chrysogaster* are less blackish than in the Peruvian and north-Bolivian populations of *bivittatus*, being like those of the north-Argentine birds, while *c. chlorophrys* has these stripes again deep in tone.

In shape of bill, *c. chrysogaster* and *c. chlorophrys* agree and

<sup>1</sup> Specimen in collection of New York Zoological Society.

differ from *bivittatus*, having this member relatively short and thick, with the culmen more noticeably decurved toward the tip than in *bivittatus*. It is also lighter in color, less blackish than in *bivittatus*. In lengths of wing, tail, bill, and feet, *chrysogaster* and *chlorophrys* agree well together, being smaller, on average, than *bivittatus*. *Chlorophrys* has an even shorter tail than *c. chrysogaster*.

In these characters, therefore, it is possible to find justification for putting *chrysogaster* and *bivittatus* in a single specific group, or to keep them specifically distinct, depending on the evaluation of the similarities and dissimilarities. I believe, however, that the general proportions and the configuration of the bill present the stronger argument for recognizing two species, each of which shows much the same range of variation in respect to details of coloration, with extremes of one sort or another differently presented.

We are still left with the curious hiatus that exists between the range of *c. chrysogaster* in central and southeastern Perú and that of *c. chlorophrys* in western Ecuador, and I can find no likely candidate for the position of connectant form among the birds that occupy the northern part of Perú.

Additional records of *chrysogaster* are from Amable Maria, Monterico, and Yahuar Mayo.

#### SPECIMENS EXAMINED

##### *B. c. chrysogaster*.—

###### PERÚ:

- Chanchamayo, 1 ♀ ;
- La Merced, 1 ♂ ;
- Tulumayo, 3 ♂, 2 ♀ ;
- La Pampa, 2 ♀ ;
- Astillero, 1 ♀ .

##### *B. c. chlorophrys*.—

###### ECUADOR:

- Lita, 2 ♂ ;
- Paramba, 3 ♂ ;
- Cachiyacu, 1 ♀ ;
- Chimbo, 1 ♀ .

###### COLOMBIA:

- Buenavista, Nariño, 1 ♂, 1 (?).

#### **Basileuterus tristriatus tristriatus** (Tschudi)

*M[yiodiocytes] tristriatus* TSCHUDI, 1844 (May), Arch. Naturgesch., 10th year, vol. 1, p. 283—Perú; Valley of Vitoc suggested by Hellmayr, 1935; Mus. Neuchâtel.

There appear to be no recognizable distinctions among the birds of the eastern face of the Andes from the Río Zamora in southern Ecuador to the Urubamba Valley in Perú. The population is quite definitely brighter in color than that of the more northern *baezae* and has more white on the throat, but extreme examples in both series are very similar.

Additional records are from Ropaybamba and Auquimarca, Junín. The statement of Tschudi (1845, Fauna Peruana, Aves, p. 194) that he found this bird at San Pedro, near Lurin, on the coast of Perú was certainly an error as has been pointed out by earlier authors.

Chapman (1924, Amer. Mus. Novitates, no. 143, p. 6) and Todd (1929, Proc. U. S. Natl. Mus., vol. 74, p. 62) comment on a specimen from La Frijolera, Colombia, that appears to be indistinguishable from the present Peruvian form, although both authors considered it a mutant of a local Colombian subspecies—Chapman of *auricularis* and Todd of *daedalus* (which Chapman did not recognize). Although this conclusion is not impossible, it may be that a series of specimens from the region of La Frijolera would show a resident population with the characters of this unique example. Such a series has not been available to any student of the group but should be secured and studied before final disposition of the case is made.

Beyond the Urubamba Valley, in southeastern Perú, the population is noticeably different and has been assigned by authors to the north central Bolivian form, *punctipectus*, although differences have been noted. With somewhat more material than has been available to earlier workers, I believe that there is enough distinction presented to warrant the recognition of a new form from this region. The description follows:

***Basileuterus tristriatus inconspicuus*, new subspecies**

TYPE: From Inca Mine, southeastern Perú. No. 74071, American Museum of Natural History. Adult male collected August 3, 1900, by H. H. Keays; original no. 81.

DIAGNOSIS: Similar to *B. t. punctipectus* of the Cochabamba region of Bolivia but differing by more uniform under parts, with the spotting on the breast and throat duller and less obvious or obsolete; throat averaging whiter, less yellowish.

RANGE: Subtropical Zone of the Inambari Valley of south-

eastern Perú and possibly adjacent areas, extending eastward into northwestern Bolivia north of La Paz.

DESCRIPTION OF TYPE: Center of crown occupied by a broad stripe of Ivory Yellow, becoming more whitish on the occiput and nape; bordering this median stripe on each side is a broad blackish stripe expanding posteriorly; upper part of lores broadly whitish, continued somewhat more narrowly over the orbit in a superciliary stripe that becomes tinged with grayish at the posterior end; lower part of lores occupied by a blackish patch; a broad postocular stripe blackish, spreading across the middle of the auricular area and anteriorly below a large, white, subocular lunule; posterior part of auriculars dull whitish, forming a vertical stripe connecting with the throat. Back Citrine Drab  $\times$  Yellowish Olive; throat dull whitish, with a narrow dusky submalar stripe at the sides; breast and belly medially Ivory Yellow  $\times$  Colonial Buff with indistinct traces of pale Grayish Olive specks at the tips of the feathers, more obvious on sides; flanks near Grayish Olive; under tail-coverts with the longer feathers tinged with light Isabella Color. Wings dark brown, with the outer margins of the remiges Yellowish Olive  $\times$  Light Yellowish Olive; exposed portions of upper wing-coverts like the back; under wing-coverts yellowish white; inner margins of remiges narrowly dull whitish. Tail brown, with outer margins Light Brownish Olive toward the base. Bill (in dried skin) with maxilla brown, mandible pale brownish; feet brown. Wing, 62 mm.; tail, 52.5; exposed culmen, 9; culmen from base, 12.8; tarsus, 20.

REMARKS: Females like the males in color but with shorter wing and tail (wing, 53–58.6; tail, 48–51.5; males, wing, 57–64; tail, 50–57.5).

Seven Peruvian specimens show rather more than average distinction from topotypical *punctipectus* from the Cochabamba region of Bolivia. In fact, only two of the Peruvian birds have the spotting on the breast pronounced enough to suggest *punctipectus* at its least-spotted extreme, far from the average of the Cochabamba form. The upper parts average a little duller olive also, but the character is not constant enough to be of much service. Other Peruvian records are from Huaynapata and Río Cadena.

A little farther east, in the region north of La Paz, Bolivia, there is less certainty as to the proper assignment of the material. Nine specimens certainly from this area are, as a series, interme-

diate between the southeast-Peruvian specimens and the Cochabamba region birds although closer to the former. Two of the nine birds have as much spotting on the breast as the more weakly marked Cochabamba specimens, and the others are very lightly marked, agreeing well with the Peruvian series. Three additional birds from the Rusby collection are uncertain owing to the lack of adequate and reliable data. One of these is marked as collected at Mapiri but is dark, with moderately heavy pectoral markings and a strongly yellow throat. The elevation is given at 4000 feet which is puzzling since the well-known locality of that name north of La Paz is much higher and off the route followed, as nearly as I can ascertain, by the expedition in question. This bird is the nearest to *punctipectus* of the three mentioned and is matched in respect to the pectoral spotting by a single example from Roquefalda, itself more lightly marked than most of the rest of the Cochabamba series.

The other two Rusby birds have no exact localities but may have come from the La Paz region. One has an unspotted breast like one extreme of the Peruvian series (quite unmatched in Cochabamba birds), while the other is like the more heavily spotted Peruvian and La Paz examples.

The La Paz examples have the general tone of the under parts a little stronger yellow than is shown by Peruvian birds at hand, but this is the only character that approximates the features of *punctipectus* as compared with *inconspicuus*. As noted above, the closer affinity appears to be with the Peruvian form.

In eastern Bolivia, a different combination of characters apparently exists, although the material to demonstrate it is limited. Three examples from the Department of Santa Cruz, kindly lent by Mr. deSchauensee of the Academy of Natural Sciences of Philadelphia, agree in characters that differentiate them from all the 41 examples of *inconspicuus* and *punctipectus* at hand. Through the kindness of Mr. deSchauensee I am enabled to describe the form, as follows:

***Basileuterus tristriatus canens*, new subspecies**

TYPE: From Samaipata, Department of Santa Cruz, Bolivia; altitude 5500 feet. No. 133676, Academy of Natural Sciences of Philadelphia. Adult male collected November 3, 1937, by M. A. Carriker, Jr.; original no. 16407.

DIAGNOSIS: Similar to *B. t. punctipectus* of the region north



of Cochabamba, Bolivia, but back more grayish olive, median crown stripe more whitish, less tinged with yellow or buff; lateral crown stripes more deeply black; under parts whiter, less yellowish; breast similarly, though slightly less heavily, spotted with dusky.

RANGE: Known only from the type locality, but probably occurs in adjacent areas on the southeastern slope of the Bolivian Andes.

DESCRIPTION OF TYPE: General pattern as described for *B. t. inconspicuus*, but central crown stripe paler and duller, near Olive Buff; superciliaries whiter; back near Deep Grayish Olive; exposed outer margins of remiges and rectrices a little brighter, near Citrine-Drab. Throat whitish, tinged with Marguerite Yellow; middle of belly Marguerite Yellow  $\times$  Primrose Yellow; under tail-coverts paler; breast a little deeper, marked with conspicuous dusky spots (not so sharply defined as in *punctipectus*), continued anteriorly on the throat; flanks near Light Yellowish Olive. Wing, 64 mm.; tail, 57; exposed culmen, 9; culmen from base, 12.8; tarsus, 20.5.

REMARKS: Female like the male but somewhat smaller. Wing, 58; tail, 52; exposed culmen, 9; culmen from base, 12.8; tarsus, 20.

A second male is whiter on the under parts and the central crown stripe than the type or the single female and is thus even more distinct from *punctipectus* than they are, although all three resemble one another more than they do the Cochabamba form.

#### SPECIMENS EXAMINED

*B. t. melanotis*.—

COSTA RICA:

Aquinares, 2 ♂;

Quebradilla de Azahar, 2 ♀;

Azahar de Cartago, 1 (?).

PANAMÁ:

Boquete, 1 ♂, 1 ♀;

Chiriquí, 1 ♂, 1 (?).

*B. t. chitrensis*.—

PANAMÁ:

Chitrá, 8 ♂ (including type), 2 ?♂, 7 ♀, 1 (?);

Santa Fé, 1 ♂, 1 ?♂.

*B. t. daedalus*.—

COLOMBIA:

Salento, 1 ♂, 1 (?);

Miraflores, 3 ♂, 1 ♀, 1 (?);  
 Las Lomitas, 2 ♀;  
 San Antonio, Cauca, 6 ♂, 1 ♀;  
 Gallera, 1 ♂, 1 (?);  
 El Roble, Quindio Andes, 2 ♂, 1 ♀;  
 Cocal, 1 ♂;  
 Cerro Munchique, 1 ♀;  
 "Bogotá," 1 (?).

## ECUADOR:

Gualea, 2 ♂, 1 (?);  
 Paramba, 2 ♂, 1 ♀.

*B. t. subsp.?*

## COLOMBIA:

La Frijolera, 1 ♂.

*B. t. auricularis.*—

## COLOMBIA:

La Candela, 1 ♂, 1 ♀;  
 La Palma, 1 ♂;  
 Aguadita, 1 ♂;  
 near San Agustín, 1 ♂.

*B. t. meridanus.*—

## VENEZUELA:

El Valle, 1 ♂;  
 Mt. Bucarito, 1 (?);  
 El Limón, 1 ♂;  
 Cumbre de Valencia, 1 ♂;  
 "Caripe" (loc. err.), 2 (?).

*B. t. bessaeri.*—

## VENEZUELA:

Cotiza, 1 ♂;  
 Cerro de Avila, 1 ♂;  
 Silla de Caracas, 1 ♂;  
 Galipán, 1 ♂, 1 ♀;  
 "Venezuela," 2 ♂, 1 ♀, 1 (?).

*B. t. baezae.*—

## ECUADOR:

Baeza, 3 ♂ (including type), 2 ♀;  
 lower Sumaco, 3 ♂, 3 ♀;  
 San José de Sumaco, 1 ♂;  
 Macas region, 1 (?).

*B. t. tristriatus.*—

## ECUADOR:

Sabanilla, 1 ♂, 1 ♀.

## PERÚ:

Chaupe, 2 ♂, 1 (?);  
 Lomo Santo, 1 ♂;  
 Santa Rosa, 1 ♂;  
 Uchco, 1 ♂, 2 ♀;  
 Nuevo Loreto, 1 (?);

Chinchao, 2 ♂<sup>1</sup>, 1 ♀<sup>1</sup>;  
 Utcuyacu, 1 ♂, 3 ♀;  
 Chilpes, 1 ♂, 2 ♀, 2 (?);  
 Pan de Azúcar, Río Tarma, 1 ♀;  
 Idma, 2 ♂, 1 ♀.

*B. t. inconspicuus*.—

PERÚ:

Inca Mine, 2 ♂ (including type);  
 Santo Domingo, 1 ♂, 1 ♀, 1 ♂<sup>2</sup>, 1 (?)<sup>2</sup>;  
 La Oroya, 1 ♂<sup>2</sup>.

BOLIVIA:

Nequejahuira, 1 ♂, 1 (?);  
 "Bolivia," 1 (?);  
 Calabatea, La Paz, 1 ♂<sup>2</sup>, 1 ♀<sup>2</sup>;  
 Sandillani, 2 ♂<sup>2</sup>, 3 ♀<sup>2</sup>.

*B. t. punctipectus*.—

BOLIVIA:

Locotal, 2 ♂, 1 ♀;  
 Incachaca, 1 ♂, 1 ♀, 1 ♂<sup>2</sup>, 1 ♀<sup>2</sup>;  
 Roquefalta, 1 ♂, 2 (?);  
 Yungas, Cochabamba, 3 ♂, 1 ♀, 1 (?)<sup>2</sup>;  
 San Jacinto, 1 ♀<sup>2</sup>, 1 (?)<sup>2</sup>;  
 Palmar, 1 ♀<sup>2</sup>;  
 "Mapiri," 1 (?);  
 "Bolivia," 1 (?).

*B. t. canens*.—

BOLIVIA:

Samaipata, Santa Cruz, 2 ♂ (including type)<sup>2</sup>, 1 ♀<sup>2</sup>.

***Basileuterus trifasciatus trifasciatus* Taczanowski**

*Basileuterus trifasciatus* TACZANOWSKI, 1880, Proc. Zool. Soc. London, p. 191  
 —Callacate, Perú; ♂; type formerly in Warsaw Mus., now lost.

This form, with its conspecies *nitidior* of southwestern Ecuador, is rather certainly closely allied to the wide-ranging species *culicivorus*, the nearest geographical representative of which is found in western Colombia. The general proportions and the pattern of the head are very similar in both groups and strongly suggest close relationship. Nevertheless, there is a little break in the continuity of characters, and it may be as well to maintain specific separation until a better degree of affinity is firmly established. Many members of the genus share a variety of characters in common, and relationships may be suggested that are too distant to establish specific unity. In the present case, however, there

<sup>1</sup> Specimens in Chicago Natural History Museum.

<sup>2</sup> Specimens in Academy of Natural Sciences of Philadelphia.

is no other species evident to which *trifasciatus* appears to bear a closer affinity than *culicivorus*.

Additional records are from Callacate and Paucal.

The examination of the *culicivorus* group in the present connection has indicated that some revision is necessary in that species. The assignment of east-Colombian birds to the Trinidad form while at the same time the west-Colombian birds are placed in the north-Venezuelan subspecies appears to be unsatisfactory, and a study of material from these various regions shows the recognition here of four, instead of two, subspecies to be amply justified. Accordingly I describe the two additional forms hereunder. Furthermore, a large series of specimens from southern Brazil, Paraguay, and northern Argentina indicates the definite division of *auricapillus*, as at present recognized, into two subspecies, of which the new one also is characterized and named below.

### ***Basileuterus trifasciatus nitidior* Chapman**

*Basileuterus trifasciatus nitidior* CHAPMAN, 1924 (Nov. 6), Amer. Mus. Novitates, no. 143, p. 8—El Chiral, southwestern Ecuador; ♂; Amer. Mus. Nat. Hist.

The realignment of the boundary between Perú and Ecuador a few years ago makes it possible to include the present form in the Peruvian list on the basis of specimens from Alamor, Cebollal, and Guainche. There are no other records.

### ***Basileuterus culicivorus austerus*, new subspecies**

TYPE: From Buena Vista, above Villavicencio, Eastern Andes, Colombia; altitude 4500 feet. No. 122674, American Museum of Natural History. Adult male collected March 4, 1913, by George K. Cherrie; original no. 16389.

DIAGNOSIS: Nearest to *B. c. olivascens* of Trinidad, but back darker and browner; rufous of central crown averaging deeper; dusky postocular stripe broader, involving the upper part of the auriculars; subocular white patch usually more extensive.

RANGE: Eastern side of the Eastern Andes of Colombia below Bogotá, and Mt. Macarena; known also from "Bogotá-skins."

DESCRIPTION OF TYPE: Center of crown Orange-Rufous × Sanford's Brown with rather prominent pale gray tips; center of occiput and nape near Olive-Gray × Light Neutral Gray; this light central area bordered laterally on each side by a prominent

blackish stripe reaching from the base of the bill to the hind neck; upper part of lores broadly whitish, narrowing slightly to form a light superciliary stripe that becomes somewhat more grayish over the auriculars; lores sooty blackish; behind the eye a sooty stripe that broadens to include the upper part of the auriculars, the lower part of which is Light Neutral Gray; base of auriculars and subocular space broadly white, forming a conspicuous patch. Back Deep Olive, passing into a lighter tone on the upper tail-coverts. Chin and malar apex narrowly whitish; most of under parts Pale Lemon Yellow, somewhat paler on the under tail-coverts and darkening to Pyrite Yellow on the sides and flanks. Remiges dark Mouse Gray, somewhat paler on narrow outer margins of the primaries and with narrow white inner margins; upper wing-coverts like the back; under wing-coverts pale yellowish white; axillars duller, grayish olive at tips. Tail dark Mouse Gray with outer margins basally olive like the back. Bill (in dried skin) dark brown; feet fleshy brown. Wing, 65 mm.; tail, 54; exposed culmen, 10; culmen from base, 13.6; tarsus, 20.

I have not seen examples from the Río Caura, Venezuela, reported as *olivascens*, and cannot say whether they belong to that form or to the present one. It is possible that they belong to *B. c. segrex* which occurs not very far to the eastward.

***Basileuterus culicivorus occultus*, new subspecies**

TYPE: From Peque, Antioquia, Colombia; altitude 5000 feet. No. 134102, American Museum of Natural History. Adult male collected February 4, 1915, by Leo E. Miller and Howarth Boyle; original no. 11066.

DIAGNOSIS: Nearest to *B. c. cabanisi* of northern Venezuela but distinguishable by the darker crown-patch and darker auriculars, with the upper portion of the latter merging into the post-auricular stripe.

RANGE: Mountains above the Cauca Valley in the Central and Western Andes of Colombia; possibly also western slope of Western Andes.

DESCRIPTION OF TYPE: Head pattern as described for *B. c. austerus* but center of crown a little darker, and (in all the specimens of the present series) largely concealed beneath the gray tips of the feathers; back near Deep Grayish Olive (much grayer than in *austerus*). Chin and malar apex narrowly whitish; most of under parts Light Lemon Chrome; under tail-coverts

whitish with yellowish tinge basally; outer margins of remiges ashy gray; under wing-coverts and axillars white. Bill and feet as in *austerus*. Wing, 59 mm.; tail, 50; exposed culmen, 10; culmen from base, 13; tarsus, 20.

REMARKS: Five specimens from Primavera, 1700 meters elevation, may possibly indicate the occurrence of this form on the western side of the Western Andes, but there is some uncertainty as to the exact position of the locality in question. They are from the Rothschild Collection, obtained from a collector by the name of Raap, but I have been unable to find any positive information as to most of the localities represented in his material. Judging by the serial numbers on the field labels, the following sequence of localities obtains: Cali, San Isidro (900 meters), Media Luna (900 meters), Primavera (1700 meters), "W. Colombia," Primavera, "Yuntas" (400 meters). It has been supposed by various workers that these localities, with the exception of Cali, are on the western side of the Western Andes, probably in the Dagua Valley, but there is no proof of it. There is a Primavera at about the right elevation in the Cauca Valley south of Caldas and well northward of Cali, and on the way to this place there is a Media Luna, although at a little higher elevation than Raap's labels indicate. There is a San Isidro west of Cali, on the western side of the Andes, but it is well below 900 meters and not in the Dagua Valley, and there is a Las Juntas also on the west slopes at a low elevation. Until material is at hand from localities known to be on the western side of the cordillera, I must query that portion of the suggested range, although it is not improbable.

This small series is consistently distinguishable from *cabanisi*. Most of my material of that form is from the Mérida region, but two examples are from El Limón, slightly east of the type locality of *cabanisi*, while Mérida is at a greater distance to the westward.

I find *B. c. indignus* from Santa Marta very difficult to distinguish from *cabanisi*. It averages a very little lighter yellow on the under parts and usually has the auricular region paler and more whitish, but these characters are no more constant than the yellow, instead of orange-tinged, crown-patch. In 18 specimens of *cabanisi*, six have a deeply colored crown-patch, four have the area yellow with an orange tinge, and eight have it simple yellow. In eight skins of *indignus*, three have a yellow crown,

three have it tinged with orange, and two have it as deeply colored as any *cabanisi*. The proportion of individuals with simple yellow crown-patch is thus greater in *cabanisi* than in *indignus*, as far as the present limited material indicates. Mr. Todd, however, has reported a much greater preponderance of yellow in a larger series of *indignus* than I have examined, and in view of this and the additional average characters I have mentioned above, I provisionally accept *indignus*.

***Basileuterus culicivorus azarae*, new subspecies**

TYPE: From Sapucay, Paraguay. No. 505746, American Museum of Natural History. Adult male collected June 3, 1900, by William Foster; original no. 15.

DIAGNOSIS: Similar to *B. c. auricapillus* of Rio de Janeiro (type locality here further restricted to Therezopolis), by duller and more brownish olive mantle. Slightly darker backed than *B. c. segrex* of Mt. Roraima, Venezuela, and external margins of the remiges distinctly olivaceous or brownish olive, not gray.

RANGE: Southern Brazil from the Organ Mountains (south-western Rio de Janeiro) to Rio Grande do Sul, and westward through São Paulo to Matto Grosso; also Paraguay; northern and eastern Argentina (Buenos Aires; Tucumán).

DESCRIPTION OF TYPE: Center of crown Orange-Rufous × Cinnamon-Rufous with conspicuous grayish tips; center of hind neck Olive-Buff × Smoke Gray; this central area bordered laterally by a broad brownish black stripe on each side converging at the base of the culmen; anterior and upper lores and nasal feathering dull whitish, continued posteriad in a superciliary stripe which develops a narrow streak of clearer white on the upper eyelid and becomes duller again over the auriculars; a dusky spot immediately in front of the eye and a postocular stripe of similar dusky brown; below the eye an ill-defined whitish lunule; auriculars dull brownish, somewhat whitish anteriorly. Mantle Buff Olive × Light Brownish Olive; uropygium near Yellowish Olive. Chin narrowly whitish; throat light Strontian Yellow, passing into Strontian Yellow × Wax Yellow on the central part of the breast and belly; sides dark grayish; flanks tinged with olive; under tail-coverts lighter yellow than the belly. Remiges dark brownish, with exposed outer margins and upper wing-coverts like the mantle; under wing-coverts pale yellow; inner margins of remiges narrowly whitish. Tail dark brown with outer mar-



gins like the mantle. Bill (in dried skin) light brown; feet light brown. Wing, 58 mm.; tail, 52.5; exposed culmen, 9.6; culmen from base, 13.5; tarsus, 19.

REMARKS: Females like the males, apparently in size as well as coloration.

From the material at hand, *B. c. auricapillus* appears to occur in the State of Rio de Janeiro in the Organ Mountains and in at least adjacent parts of Minas Gerais and Espirito Santo. It is separable from *azarae* by its greener back, a character that I cannot match in over a hundred examples from other Brazilian states nor from Paraguay and Argentina. The character has been noted previously by Todd (1929, Proc. U. S. Natl. Mus., vol. 74, p. 69) who was unable to define the possible range and refrained from describing a new form for that reason. Birds from the Serra de Itatiaia have a tendency toward *auricapillus* but are still nearer *azarae* (as Todd also noted), while one specimen from Espirito Santo (Santa Barbara de Caparaó) suggests the Itatiaia characters but remains a little brighter and nearer *auricapillus*.

*Basileuterus c. viridescens* of eastern Bolivia is again more greenish above than *azarae*, but the tone is lighter and duller than that of *auricapillus* from which it is easily distinguished.

Four specimens from Bahia and Ceará are puzzling and may represent a still different subspecies, being lighter and grayer above than either *auricapillus* or *azarae*, but they are not sufficiently convincing to enable me to define such a new form, and I leave them for future workers to study when more material is available from the area involved.

Since Azara first described the Paraguayan birds, I have named the new form for him.

#### SPECIMENS EXAMINED

##### *B. t. trifasciatus*.—

###### PERÚ:

Palambra, 4 ♂, 2 (?);

Seques, 2 ♂, 3 ♀, 1 (?);

San Felipe, Río Huancabamba, 1 ♂.

##### *B. t. nitidior*.—

###### ECUADOR:

(El Chiral, Celica, Punta Santa Ana, Guachanamá, Zaruma, San Bartolo, Loja, Las Piñas, and Lunamá), 16 ♂, 14 ♀, 2 (?).

###### PERÚ:

Alamor, 7 ♂, 4 ♀;

- Cebollal, 2 ♂;  
 Guainche, 1 ♂.
- B. c. indignus*.—  
 COLOMBIA:  
 Santa Marta (Onaca, Minca, and Las Nubes), 1 ♂, 1 ♀, 7 (?).
- B. c. occultus*.—  
 COLOMBIA:  
 Peque, Antioquia, 1 ♂ (type);  
 Primavera, 5 ♂;  
 Miraflores, east of Palmira, 1 (?).
- B. c. austerus*.—  
 COLOMBIA:  
 Buenavista, E. Andes, 1 ♂ (type), 2 ♀;  
 Villavicencio, 1 (?);  
 Mt. Macarena, 1 ? ♂.
- B. c. cabanisi*.—  
 COLOMBIA:  
 Cúcuta, 1 ♂.
- VENEZUELA:  
 (Mérida, Escorial, Culata, El Valle), 3 ♂, 3 ♀, 10 (?);  
 El Limón, 2 (?).
- B. c. olivascens*.—  
 VENEZUELA:  
 (Santa Ana Valley, Campos Alegre Valley, Quebrada Seca, San Antonio, La Tigrera, Cocallar, Montaña de Guácharo, Cristóbal Colón, "Venezuela"), 18 ♂, 7 ♀.
- TRINIDAD:  
 (Princetown, Caparo, Carenage, Laventille, and Heights of Aripo), 9 ♂, 11 ♀, 2 (?).
- B. c. segrex*.—  
 VENEZUELA:  
 Mt. Roraima, Paulo, 8 ♂ (including type), 1 ♀;  
 Arabupú, 5 ♂, 1 ? ♀, 3 ♂<sup>1</sup>, 2 ♀<sup>1</sup>;  
 (Altiplanicie de Nuria, El Palmar, Cerro Tomasote, Cerro Ptari-tepui, La Paragua, and Cerro Tigre), 5 ♂<sup>1</sup>, 8 ♀<sup>1</sup>, 5 (?)<sup>1</sup>.
- B. c. viridescens*.—  
 BOLIVIA:  
 Province of Sara, 5 ♂, 2 ♀.
- B. c. azarae*.—  
 ARGENTINA:  
 Tucumán (above San Pablo, Tafí trail, Sarmiento, and Ocampo), 5 ♂, 6 ♀;  
 Buenos Aires, Barracas al Sud, 1 ♂, 2 ♀.
- PARAGUAY:  
 Sapucay, 6 ♂ (including type);  
 (Río Negro, east of Caaguassú, upper Iguassú River, east of Yhú, Colonia Independencia, Abaí, and Niu Poná), 6 ♂, 5 ♀, 4 (?).

<sup>1</sup> Specimens in Phelps Collection, Caracas.

## BRAZIL:

Matto Grosso (Utiarity and Rio Amambahy), 1 ♂, 1 ♀;  
 Rio Grande do Sul (Candiota, Sapyranga, Hamburgo Velho, Nonohay, Erebang, Lagoa de Forno, Santa Cruz, Campo Bom, Sananduva, and Sinimbú), 16 ♂, 5 ♀, 5 (?);  
 Santa Catharina (Ilha Redonda, Salto Pirahy, Cerro Verde, Palmital, and Rio Cascalho), 2 ♂, 5 ♀, 4 (?);  
 Paraná (Tibagy, Porto Almeida, Foz de Iguasú, Guayra, Porto Mendez, Castro, and Corvo), 13 ♂, 7 ♀, 2 (?);  
 São Paulo (Fazenda Cayoá and São Sebastião), 3 ♂, 3 ♀;  
 Rio de Janeiro (Monte Serrat, Maceiras, and Ponte Maromba), 6 ♂, 2 ♀, 2 (?).

*B. c. auricapillus*.—

## BRAZIL:

Rio de Janeiro, Therezopolis, 9 ♂, 5 ♀;  
 "Rio-skin," 1 (?);  
 Espírito Santo (Engenheiro Reeve and Santa Barbara de Caparaó), 2 ♂;  
 Minas Gerais (Rio Caparaó, Cachoeira de Fumaza, Fazendinha, Boa Espera, Fazenda Emmerinck, Pico de Bandeira, and Santa de Padre Venina), 6 ♂, 6 ♀.

*R. c.* subsp. ?—

## BRAZIL:

Bahia, Jaguaquara, 1 (?);  
 Ceará, Viçosa, 1 ♀, 2 (?).

***Basileuterus coronatus coronatus* (Tschudi)**

*M[yiodiotes] coronatus* TSCHUDI, 1844 (May), Arch. Naturgesch., 10th year, vol. 1, p. 283—Perú = Chanchamayo Valley.

This form, with the greenish back, heavy black lateral crown-stripes, gray or black forehead, and greenish flanks, ranges from central Perú southeastward to the Urubamba Valley and presumably to the Bolivian border. A single specimen from the extreme southeastern region is somewhat equivocal since it approaches the still darker *notius* of the adjacent parts of Bolivia. From a geographical point of view, it may well represent an extreme variant of that form, but Todd and Hellmayr agree in referring other southeast-Peruvian specimens to *coronatus*, and in the absence of more material I follow their lead.

The case is otherwise with respect to north-Peruvian specimens. Todd (1929, Proc. U. S. Natl. Mus., vol. 74, pp. 35, 36) referred two Uchco birds to *coronatus* and 12 others from near-by northern localities to the west-Ecuadorian *elatus*, while Hellmayr (1935, Field Mus. Nat. Hist., zool ser., vol. 13, pt. 8, p. 516) assigned all of these northern birds (of which he had seen eight examples)

to *coronatus*. Both authors, however, note the intermediate character of the north-Peruvian specimens.

With 15 birds at hand from the critical region (and earlier notes on three others) the relative stability of the characteristics of this population becomes apparent and I believe indicates the desirability of recognizing a new subspecies from this part of Perú. It is accordingly described below.

Records that remain with *coronatus* are from Chanchamayo, Vitoc, Huaynapata, Garita del Sol, Paltaypampa, and near Torontoy.

***Basileuterus coronatus inaequalis*, new subspecies**

TYPE: From San Pedro, south of Chachapoyas, Perú; altitude 8600–9400 feet. No. 235638, American Museum of Natural History. Adult male collected January 23, 1926, by Harry Watkins; original no. 10025.

DIAGNOSIS: Nearest to *B. c. elatus* of northwestern Ecuador, but differs by slightly darker back, gray instead of rufescent nape (centrally), usually duller forehead (buffy instead of rufous in most cases), and very slightly greater average lengths of wing and tail. Differs from *B. c. coronatus* of central and southern Perú by more golden olive back and flanks, buffy or rufescent forehead instead of gray or blackish, narrower lateral crown-stripes, slightly lighter gray sides of the head, and less purely white and grayish throat, which is lightly drab-tinged.

RANGE: Subtropical Zone of the Central Andes of northern Perú.

DESCRIPTION OF TYPE: Top of head medially dark Sanford's Brown, changing abruptly to Neutral Gray on the hind neck, and anteriorly nearly reaching the base of the bill where, however, the forehead is narrowly warm buff; on each side of the central area is a relatively narrow black stripe, broadening somewhat posteriorly on the hind neck but very weak above the lores; upper part of lores pale buff, merging into a prominent superciliary stripe of light Neutral Gray; ante-ocular patch and postocular stripe sooty blackish; an inconspicuous whitish subocular lunule; auriculars light gray with inconspicuous, short, whitish shaft-streaks anteriorly. Back Citrine  $\times$  Orange-Citrine; upper tail-coverts slightly tinged with brownish. Chin and throat Pale Smoke Gray, somewhat darker (Smoke Gray) laterally and posteriorly; breast and belly deep Strontian Yellow  $\times$  Wax

Yellow, with the breast somewhat obscured by brownish olive tips; sides Buffy Citrine; flanks near Orange-Citrine; under tail-coverts Aniline Yellow with narrow external margins of Mars Yellow on the longer feathers. Wings, upper wing-coverts, and tail brownish, with exposed outer margins like the back; under wing-coverts dull, pale yellowish with a dark area at base of primaries; inner margins of remiges light smoky gray. Bill (in dried skin) dark brown; feet light brown. Wing, 73 mm.; tail, 66; exposed culmen, 11; culmen from base, 15; tarsus, 24.

REMARKS: Females about like the males in coloration, perhaps averaging slightly clearer on throat and breast; size smaller: wing, 65–69 (average, 66.5); tail, 55–60.5 (average, 57.8). Males, wing, 69–74 (average, 71.5); tail, 58–64 (average, 62). These measurements approximate those of *c. coronatus* but are smaller than those of *elatus* in which the largest extremes in the series at hand are: wing, 71.5; tail, 60 (different birds).

Immature examples have the rufous area of the cap duller than that of adults and further obscured by brownish olive tips on the feathers. The dark lateral stripes are very weak or obsolete as is the postocular stripe, leaving the sides of the head nearly uniform dark brown. The back is darker and browner than that of the adults, and the outer margins of the greater upper wing-coverts are somewhat brighter than in fully grown birds. One young bird has the under surface throughout clouded by dark tips on the feathers.

Only one specimen of *inaequalis* at hand shows any definite trace of rufescence on the nape, and that is weakly suggested. On the other hand, one specimen of *elatus* has the nape gray as in the present form, although one other, from Pallatanga, has only a weak suggestion of rufescence in the area. The remaining examples of *elatus* have prominent rufescence in the nuchal area, only a little lighter in tone than the color of the crown.

Records that belong with *inaequalis* are from Coccochó, Tamiapampa, Ray-urmana, and Levanto.

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I see no reason why *castaneiceps* and its related white-bellied conspecies may not be included in the *coronatus* group. The dorsal coloration follows the same pattern and manner of variation, and the sole distinction between the two sets of forms lies in the presence or absence of yellow on the lower under parts. This is in part overcome by the individual variation of the white-

bellied forms, some examples of which show very definite yellow tendencies, albeit not to the depth of hue shown by *coronatus* and the similarly marked forms.

There is good geographic replacement among the various forms, with the interesting fact that the white-bellied subspecies occur in a group between two separated sets of the yellow-bellied ones—*regulus* and *elatus* in Venezuela, Colombia, and northwestern Ecuador, and *inaequalis*, *coronatus*, and *notius* from north-central Perú to Bolivia.

### ***Basileuterus coronatus castaneiceps* Sclater and Salvin**

*Basileuterus castaneiceps* SCLATER AND SALVIN, 1877, Proc. Zool. Soc. London, p. 521—"Jina" [= Jima], Ecuador; Brit. Mus.

Birds from the Pacific side of the Western Andes of northern Perú are easily referable to the southwest-Ecuadorian form. I have no certain evidence that this form crosses to the eastern side of this cordillera in Perú, although two birds from Loja, Ecuador, indicate such a crossing in southern Ecuador. Two specimens from Lomo Santo, south of Jaén, Perú, were referred by Todd to *castaneiceps*, but I believe they are better assigned to *chapmani* as is discussed under that form.

There are no Peruvian records other than of the birds listed with the material examined herewith.

### ***Basileuterus coronatus chapmani* Todd**

*Basileuterus castaneiceps chapmani* TODD, 1929, Proc. U. S. Natl. Mus., vol. 74, p. 32—Chaupe, Perú; ♂; Amer. Mus. Nat. Hist.

This dark-backed form has a very restricted range on the eastern side of the Western Andes of northern Perú. On the western side of that range, it is replaced by *castaneiceps*, while across the Marañón, in the Central Andes, the yellow-bellied *inaequalis* occupies the corresponding habitat.

Two specimens from Lomo Santo, south of Jaén, were referred by Todd to *castaneiceps*, but I believe must belong to *chapmani*. One of them is definitely in agreement with Chaupe birds and while the other (without given sex) is light-backed enough to match certain examples of *castaneiceps*, it is darker than some other specimens of that form. In addition, the locality is in the same orographic position as Chaupe and Tambillo which Todd places in the range of *chapmani*.

It may be noted that a very minor error occurs in the original description of *chapmani*. The date of collection of the type specimen was February 10 instead of February 14 as given. There is little likelihood of any confusion resulting from the typographical error, but it may be as well to correct it here.

Other than the localities of the specimens at hand, there are records from Tambillo and Cutervo.

#### SPECIMENS EXAMINED

##### *B. c. regulus*.—

###### VENEZUELA:

(Nevados and Culata, Mérida region), 5 ♂.

###### COLOMBIA:

(Miraflores, Tornel, above Salento, Almaguer, Laguneta, Cerro Munchique, Las Lomitas, Subia, San Antonio, Santa Elena, El Eden, La Candela, Aguadita, El Roble, Fusagasugá, and "Bogotá"), 23 ♂, 18 ♀, 15 (?).

##### *B. c. elatus*.—

###### ECUADOR:

(Gualea, Mindo, west side of Pichincha, Canzacota, Verdecocha, road to Nanegal, Pallatanga, and "Quito"), 10 ♂, 3 ♀, 1 (?).

##### *B. c. castaneiceps*.—

###### ECUADOR:

(Loja, Zaruma, Taraguacocha, Salvias, El Chiral, and "Govinda" [? = Guainche, Perú], 6 ♂, 4 ♀, 2 (?).

###### PERÚ:

El Tambo, 1 ♂, 1 ♀ ;

Palambra, 3 ♂, 2 (?);

Taulis, 1 ♂, 3 ♀ ;

Seques, 2 ♂.

##### *B. c. chapmani*.—

###### PERÚ:

Chaupe, 3 ♂ (including type), 1 (?);

Lomo Santo, 1 ♀, 1 (?).

##### *B. c. orientalis*.—

###### ECUADOR:

Upper Sumaco, 5 ♂ (including type);

Oyacachi, 2 ♀ ;

lower Río Sardinas, 1 ♀ ;

Baeza, 3 ♂, 1 ♀ ;

above Baeza, 2 ♀ ;

Baños, 1 (?);

Puente del Río Quijos, 1 ♀ ;

Gálgalan, Río Upano, 1 (?).

##### *B. c. inaequalis*.—

###### PERÚ:

San Pedro, 3 ♂ (including type), 3 ♀ ;

Chachapoyas, 1 ♀ ;

Leimebamba, 1 ♂ ;



Molinopampa, 1 ♂<sup>1</sup>;  
 Uchco, 1 ♂<sup>1</sup>, 1 ♀<sup>1</sup>;  
 La Lejia, 4 ♂, 2 ♀, 1 (?).

*B. c. coronatus*.—

PERÚ:

Chinchao, 1 ♀<sup>1</sup>;  
 Chilpes, 1 ♂, 3 ♀, 1 (?);  
 Utcuyacu, 3 ♂, 5 ♀;  
 Rumicruz, 1 ♂, 4 ♀;  
 Santa Rita, Urubamba, 1 ♀;  
 San Miguel, 1 ♂, 1 ♀, 1 (?);  
 Idma, 2 ♂, 1 ♀;  
 Inca Mine, 1 ♂.

*B. c. notius*.—

BOLIVIA:

Locotal, 1 ♀;  
 Roquefalda, 1 ♀.

***Basileuterus fraseri fraseri* Sclater**

*Basileuterus fraseri* SCLATER, 1883, Proc. Zool. Soc. London, p. 653, pl. 61—part; Pallatanga, Ecuador; Brit. Mus.

I can find no distinctions between Peruvian and Ecuadorian birds of this subspecies which is not surprising considering the limited range of the entire species.

The boundary treaty between Perú and Ecuador of a few years ago appears to require the inclusion of the specimens from La Puente, Guainche, Cebollal, and Alamor in the Peruvian list, although the localities were Ecuadorian at the time the birds were collected, and the latter have heretofore been discussed by Chapman and others as then properly Ecuadorian in origin.

There are no additional Peruvian records.

Intergradation between *fraseri* and *ochraceicrista* takes place at the head of the Gulf of Guayaquil where examples from the Río Chimbo show definite intermediacy. On the whole, however, they are closer to *fraseri*. Those that show the greatest resemblance, among the specimens at hand, are not fully adult and have the rufescent crown which young *fraseri* possess in distinction from the adults of that form but in common with adult and young *ochraceicrista*.

SPECIMENS EXAMINED

*B. f. fraseri*.—

ECUADOR:

(La Chonta, Santa Rosa, Pullango, Las Piñas, Zaruma, Río Jubones,

<sup>1</sup> Specimens in Chicago Natural History Museum.

Portovelo, El Chiral, Salvias, Naranjo, Chimbo, Cocó, Bucay, Punta Santa Ana, and Lunamá), 28 ♂, 19 ♀, 9 (?).

PERÚ:

Paletillas, 3 ♂, 3 ♀, 1 (?);  
 Milagros, 1 ♂;  
 Palambla, 1 ♂, 5 ♀;  
 La Puente, 2 ♂;  
 Guainche, 1 ♂, 3 ♀;  
 Cebollal, 1 ♂;  
 Alamor, 2 ♂, 2 ♀.

*B. f. ochraceicrista*.—

ECUADOR:

Chone, 2 ♂ (including type), 1 ♀;  
 Chongocito, 1 ♂, 1 ♀;  
 Chongon Hills, 1 ♂;  
 Salado, 1 (?);  
 Guayaquil, 1 ♂.

***Basileuterus rivularis semicervinus* Sclater**

*Basileuterus semicervinus* SCLATER, 1860, Proc. Zool. Soc. London, vol. 28, p. 84—Nanegal, western Ecuador; ♂, ♀ cotypes in Brit. Mus.

This form occurs in Perú only in the extreme northwestern part of the country from which a single specimen is at hand, collected at Cebollal. The bird was recorded by Chapman in his Ecuadorian volume, 1926, at which time the locality was in Ecuador.

The allocation of the form to the species *rivularis* is discussed below in the account of a new subspecies from southeastern Perú.

***Basileuterus rivularis fulvicauda* (Spix)**

*Muscicapa fulvicauda* SPIX, 1825, Avium species novae, . . . Brasiliam, vol. 2, p. 20, pl. 28, fig. 2—no locality; São Paulo de Olivença, Brazil, suggested by Todd, 1929; Munich Mus.

*Basileuterus uropygialis poliothrix* BERLEPSCH AND STOLZMANN, 1896, Proc. Zool. Soc. London, p. 331—La Gloria and La Merced, Dept. Junín, Perú; ♂♂ cotypes in Frankfort Mus. and (?formerly) Warsaw Mus.; I select La Gloria as restricted type locality.

*Phaeothlypis semicervina annexa* TODD, 1929, Proc. U. S. Natl. Mus., vol. 74, art. 7, pp. 9, 15—Pomará, lower Marañón, Perú; ♀; Amer. Mus. Nat. Hist.

I am unable to recognize either *annexa* or *poliothrix* as distinct from *semicervinus*. Five specimens from the range of *annexa*, including the type, are easily matched in a good series from localities ranging from eastern Ecuador to the upper Río Ucayali, Perú, and including a single bird from Calamá, Rio Madeira, Brazil. Likewise, a virtual topotype of *poliothrix*, while at the

lighter extreme of variation of *fulvicauda*, can be matched by other examples in the series. Farther to the southeastward, certain characters develop to a degree that makes recognition of a distinct form possible, but they are not apparent in the central Peruvian specimen at hand.

In addition to the lighter general coloration of *fulvicauda* as compared with *semicervinus*, apparent not only in the paler coloration of the dorsal surface but in the less deeply ochraceous and more extensively whitish under parts, the markings on the outermost rectrices present an excellent character. In *semicervinus* the outer feather sometimes is uniformly cinnamomeous, but usually there are some dark markings, rarely crossing both webs uninterruptedly and then apparently not extended noticeably basad along the outer web. In *fulvicauda* there is usually a complete dark band, terminal except for a fine, pale margin, and occasionally interrupted next to the shaft on the outer web, leaving the outer margin of this web dark for some distance basad. The general tone of coloration of the dark band on the remaining rectrices is lighter and less sooty than in *semicervinus*. The width of the band is about the same as in *semicervinus*, or a little greater; in *semicervinus* the band is the narrowest of any in the known forms of the species.

A single specimen from Zamora, Ecuador, has been referred by various authors to *semicervinus* in spite of the position of the locality on the eastern side of the Andes, but I believe this assignment is incorrect. The bird is darker above than most *fulvicauda* and has the under parts rather evenly ochraceous over most of the area, but it can be matched by several undoubted *fulvicauda* while the tail markings are definitely those of that form.

Berlepsch and Stolzmann described "*poliothrix*" from two specimens, neither of which was designated as type in the original account. Stolzmann (1927) claimed the La Gloria skin in the Warsaw Museum as type, while Hellmayr (1935) claimed that honor for the La Merced example in the Berlepsch Collection, Frankfort Museum, where it presumably bears that indication in Berlepsch's handwriting. Since the Warsaw Museum specimen is likely to have disappeared, it is perhaps advisable to restrict the type locality, as is done above, to the locality of the Frankfort Museum specimen, although both examples should be considered as original cotypes.

Peruvian records assignable to *fulvicauda* include those from Chayavitas, Santa Cruz (Río Huallaga), Moyobamba, Yurimaguas, Huambo, Perené, La Merced, Chanchamayo, La Gloria, Amable Maria, and probably Monterico.

The situation in Colombia is very puzzling. There appears to be a gradual transition from *semicervinus* in the west toward *fulvicauda* in the east, and it is difficult to draw any exact lines of demarcation. Judging by the material at hand, the birds from the western side of the Western Andes are the darkest and most positive *semicervinus*, agreeing with topotypes and other west-Ecuadorian specimens. Birds from the Cauca Valley are very slightly lighter in dorsal coloration, showing more olive in the general tone of the back, while the under parts remain as deeply colored. A series of "Bogotá skins" averages even lighter and more greenish above although, as in the case of the Cauca Valley specimens, some examples may be matched with light extremes from the Pacific slopes. A single example from Chicoral, upper Magdalena Valley, is at the lightest extreme and in addition has the under parts as pale as many *fulvicauda*, to which form the specimen has previously been assigned. The tail in all these birds, including the Chicoral skin, shows the characteristic markings of *semicervinus*, and unless a new form is to be established for the eastern population, assignment to *semicervinus* is indicated. The Chicoral bird may be but an exceptionally pale example of the population resident in its area, and I am unwilling to attempt a description of a possible new form hereabouts on the basis of "Bogotá skins" or without a series from the upper Magdalena. The range would be difficult to establish.

This last assertion is made in view of four examples from Mt. Macarena, southeast of Bogotá. While there is no assurance that these birds would be matched by specimens from the eastern face of the Eastern Andes as at Villavicencio (from which area no material has been examined), such correlation is quite probable. In any case, the Macarena specimens are intermediate between the Bogotá series and typical *fulvicauda*, being closer to *fulvicauda* in dorsal coloration and tail markings, though more deeply (though not more extensively) rufescent on the under side. Since the tail markings are perhaps the most definite of any of the characters, I believe that assignment of the Macarena birds to *fulvicauda* is justified, although they are not typical.

As noted above, birds from southeastern Perú are distinct from

the other Peruvian specimens and deserve recognition, as described below:

***Basileuterus rivularis significans*, new subspecies**

TYPE: From La Pampa, southeastern Perú, Tropical Zone. No. 146394, American Museum of Natural History. Adult male collected October, 1916, by Harry Watkins; original no. 220.

DIAGNOSIS: Differs from *B. r. fulvicauda* of central and northern Perú and eastern Ecuador by lighter and more greenish olive back and broader dark terminal portion of the tail (except for narrow pale margin), with the light basal portion entirely concealed by the upper and under tail-coverts; the dark area lighter and more greenish than in *fulvicauda*; outer web of outermost rectrices dark except at extreme base (but with a narrow pale tip); the under parts more extensively whitish. Differs from *B. r. bolivianus* of northern Bolivia by the presence of the buff uropygium and base of tail, and apparently also (in the specimens examined) by less strongly buffy breast and less purely white belly.

RANGE: Known only from the southeastern part of Perú, in the Tambopata and Inambari drainage.

DESCRIPTION OF TYPE: Top of head Deep to Dark Mouse Gray, becoming a little lighter over the auriculars; a few feathers on the anterior part of crown with concealed white bases; a prominent superciliary stripe dull Vinaceous Buff, becoming weaker posteriorly past the orbit; back Deep Olive, changing abruptly to warm Naples Yellow on the lower rump and upper tail-coverts. Lores, below the superciliary stripe, broadly blackish; a weak blackish stripe behind the eye; subocular space broadly buff, darkening on the auriculars to merge with the supra-auricular color; malar region somewhat brownish; chin, throat, breast, and belly light Cartridge Buff, deeper on the sides and flanks which are tinged with Hair Brown; under tail-coverts light Cream-Buff. Remiges dark brown with exposed outer margins olivaceous, brighter greenish on the secondaries and tertiaries than on the primaries; upper wing-coverts like the back; under wing-coverts Grayish Olive with carpal margin broadly more buffy. Basal portion of tail, well beneath the coverts, Cream-Buff  $\times$  Pinkish Buff; beyond this base the exposed portions of the feathers dorsally light Yellowish Olive, with the inner webs of all but the median pair somewhat duller and with pale cinnamonous inner margins and whitish tips, broadest on outermost pair;

outer web of outermost pair olive except at the extreme base and tip; inner web with the basal light color restricted to the basal half of the feathers and not at all sharply defined. Bill (in dried skin) brownish black; feet pale brown. Wing, 66 mm.; tail, 52; exposed culmen, 10; culmen from base, 15; tarsus, 21.

REMARKS: The dorsal coloration of this form is matched rather closely by that of *B. rivularis bolivianus* except for the presence of the ochraceous buff upper tail-coverts and base of the tail which do not appear in *bolivianus*, nor in *rivularis* and *mesoleucus*. Nevertheless, the reduction of the ochraceous area in *significans* is a marked approach to the condition in *bolivianus* and the other two forms mentioned, and it would not be too much to expect an even greater degree of intermediacy than is visible in the skins at hand. For example, two males from the Río Távora have broad olive tips on some of the upper tail-coverts, while a topotype of uncertain sex has the bright basal area of the tail restricted to the basal fourth on the median rectrices. A good series of *bolivianus* might possibly show a corresponding development of basal color that is not evident in the three birds at hand, none of which is topotypical. Thus, although perfect intergradation is not demonstrable, the resemblance between the two sets of populations is so great, with geographical replacement evident, that I believe the relationship is best expressed by placing *fulvicauda* and its immediate affines in the same species with *rivularis*. Records from Yahuar Mayo belong with *significans*.

#### SPECIMENS EXAMINED

##### *B. r. leucopygius*.—

###### NICARAGUA:

(Savala, Río Grande, Matagalpa, Río Tuma, and Las Cañas), 3 ♂, 3 ♀.

###### COSTA RICA:

(La Iberia, Puerto Jiménez, Miravalles, La Hondura, Bonilla, Cariblanco, and Guacimo), 11 ♂, 5 ♀.

###### PANAMÁ:

Almirante, 1 ♂, 1 ♀;

Guaval, 1 ♂ (type of *gaffneyi*);

Río Calovevora, 2 ♂.

##### *B. r. veraguensis*.—

###### COSTA RICA:

Buenos Aires, 1 ♂, 1 ♀;

Boruca, 1 ♂, 1 ♀.

###### PANAMÁ:

[Lion Hill], 1 ♂, 1 ♀, 1 (?);

Boqueron, 1 ♂ (type of *toddi*);

Bogava, 1 ♂;  
Capira, 1 ♂;  
Wilcox Camp, 1 ♂;  
Boquete, 1 (?);  
Cerro Larga, Cape Mala Peninsula, 1 ♂;  
Cerro Montoso, 1 ♀.

*B. r. semicervinus*.—

PANAMÁ:

(Cituro, Tapalisa, and Tacarcuna), 9 ♂, 1 ♀, 2 (?).

COLOMBIA:

(Barbacoas, Jiménez, Yuntas, Juntas de Tamaná, Río Barratón, Nóvita, Bagado, Ricaurte, Cuaque el Destino, Alto Bonito, San José, Puerto Valdivia, Peque, Chicoral, and "Bogotá"), 12 ♂, 7 ♀, 13 (?).

ECUADOR:

(Nanegal, Cachabí, Esmeraldas, La Chonta, Río de Oro, Chimbo, San Javier, and Paramba), 11 ♂, 9 ♀.

PERÚ:

Cebollal, 1 ♂.

*B. r. fulvicauda*.—

COLOMBIA:

Mt. Macarena, 2 ♂, 1 ♀, 1 ?♂.

ECUADOR:

(Below San José, lower Río Suno, and Zamora), 2 ♂, 6 ♀.

PERÚ:

Mouth of Río Curaray, 2 ♀;  
Orosa, 1 ♀;  
Pomará, 2 ♂, 1 ♀ (type of *annexa*);  
Huarandosa, 2 ♀;  
Perené, 1 ♀;  
Lagarto, Río Ucayali, 1 ♀;  
Santa Rosa, 2 ♂.

BRAZIL:

Rio Madeira, Calamá, 1 ♂.

*B. r. significans*.—

PERÚ:

La Pampa, 1 ♂ (type), 1 (?);  
Río Tavera, 2 ♂, 1 ♀;  
Astillero, 1 ♀.

*B. r. bolivianus*.—

BOLIVIA:

Vermejo, 1 ?♂, 1 ♀;  
Tres Arroyos, 1 ♀.

*B. r. rivularis*.—

BRAZIL:

"Brasil," 1 ♂, 1 ♀, 1 (?) (all cotypes);  
São Paulo, Fazenda Cayoá, 4 ♂, 2 ♀;  
"Bahia," 1 (?);  
Santa Catharina, Salto Pirahy, 1 ♂, 2 ♀;  
Palmital, 1 ♂, 1 ♀;

Espirito Santo, Segrado do Veado, 2 ♂, 1 ♀.

*B. r. mesoleucus*.—

BRAZIL:

Rio Xingú, Villarinho do Monte, 2 ♂, 2 ♀.

FRENCH GUIANA:

Approuague, 2 ♂;

Cayenne, 1 (?).

BRITISH GUIANA:

Kamarang River, 1 ♂, 1 ♀;

Rockstone, 1 ♀;

Minnehaha Creek, 1 ♂;

Tumatumari, 1 ♂, 1 ♀, 1 (?).

VENEZUELA:

Mt. Auyan-tepui, 1 ♂, 1 ♀;

Mt. Duida, foot, 2 ♂;

Río Orinoco, Suapure, 1 ♂.



